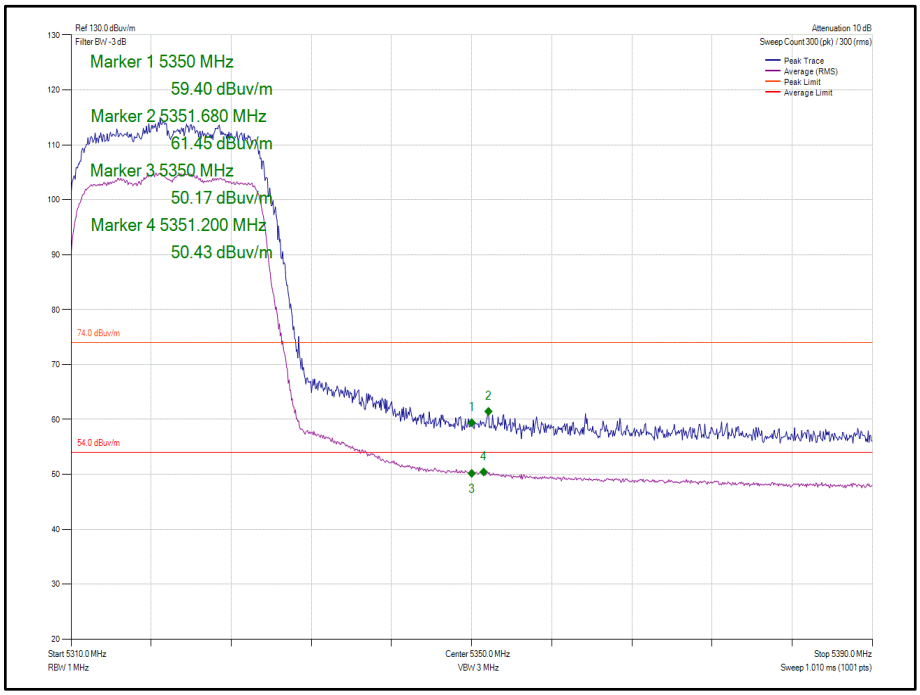


Figure 428 - 802.11n HT20 SDM Cores 0-1 - 5320 MHz Band Edge Frequency 5350 MHz

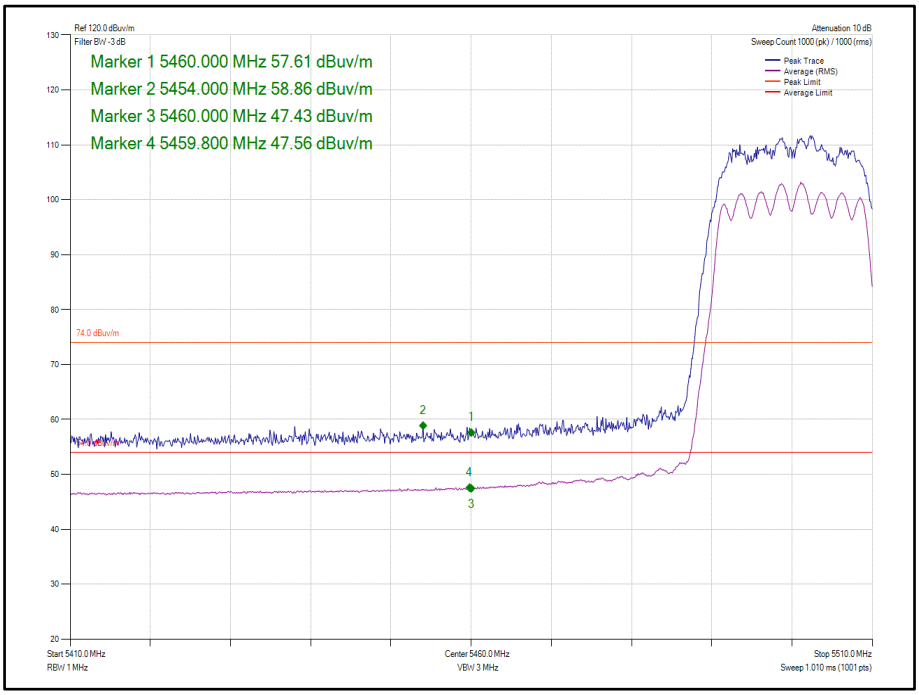


Figure 429 - 802.11n HT20 CDD Cores 0-1 - 5500 MHz Band Edge Frequency 5460 MHz

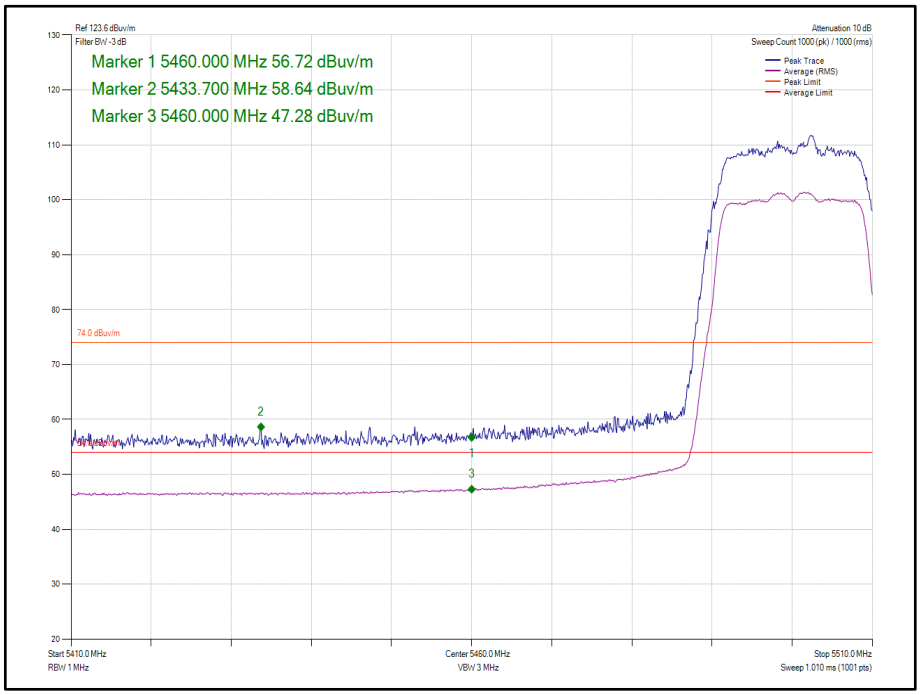


Figure 430 - 802.11n HT20 SDM Cores 0-1 - 5500 MHz Band Edge Frequency 5460 MHz

Mode	Modulation Coding Scheme	Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
802.11n HT40 Core 0	MCS0	5190	5150	64.44	51.38
802.11n HT40 Core 0	MCS0	5310	5350	68.86	51.10
802.11n HT40 Core 0	MCS0	5510	5460	56.76	45.92

Table 218 - SISO

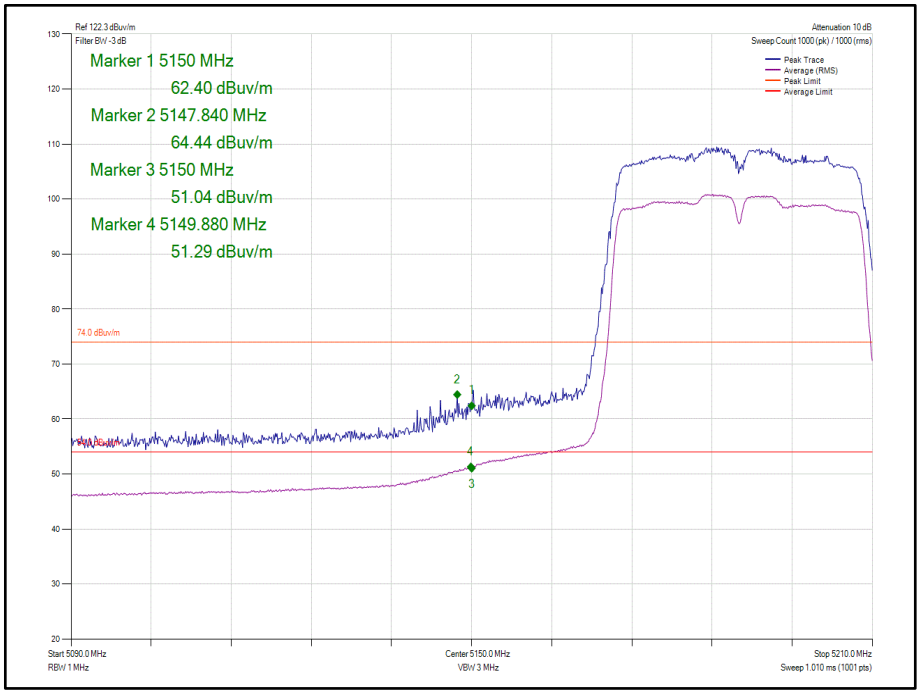


Figure 431 - 802.11n HT40 Core 0 - 5190 MHz Band Edge Frequency 5150 MHz

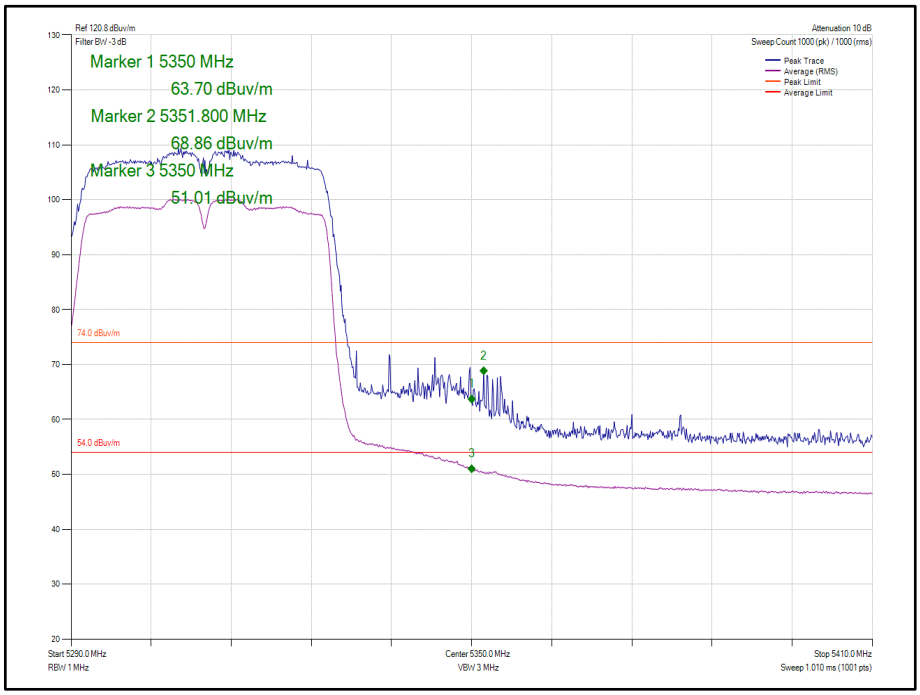


Figure 432 - 802.11n HT40 Core 0 - 5310 MHz Band Edge Frequency 5350 MHz

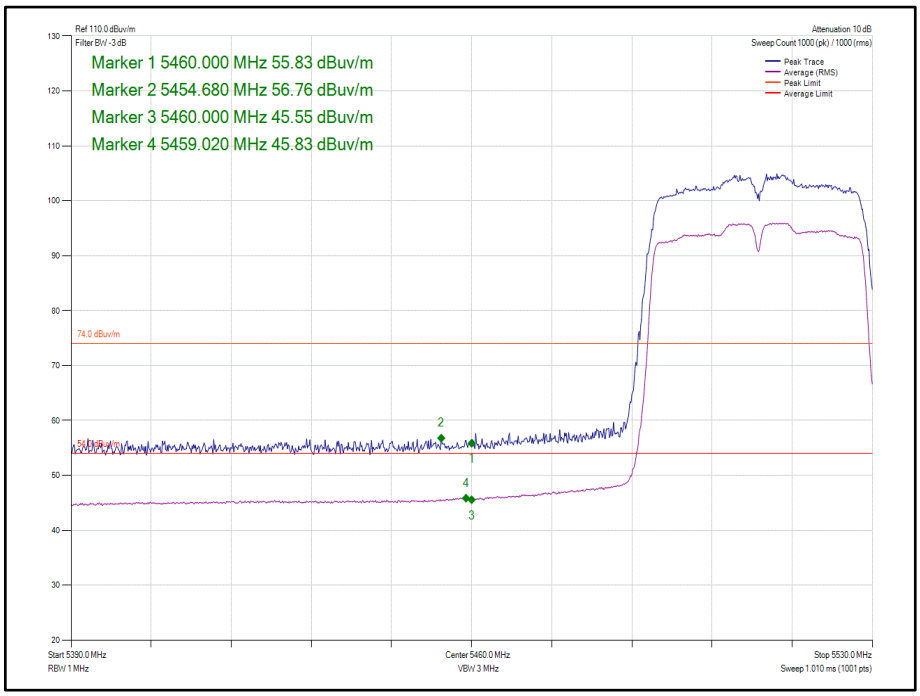


Figure 433 - 802.11n HT40 Core 0 - 5510 MHz Band Edge Frequency 5460 MHz

Mode	Modulation Coding Scheme	Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
802.11n HT40 CDD Cores 0-1	MCS0	5190	5150	62.79	51.33
802.11n HT40 SDM Cores 0-1	MCS0	5190	5150	63.41	51.51
802.11n HT40 CDD Cores 0-1	MCS0	5310	5350	64.15	50.23
802.11n HT40 SDM Cores 0-1	MCS0	5310	5350	60.55	49.77
802.11n HT40 CDD Cores 0-1	MCS0	5510	5460	58.68	47.73
802.11n HT40 SDM Cores 0-1	MCS0	5510	5460	58.85	46.00

Table 219 – MIMO 2TX

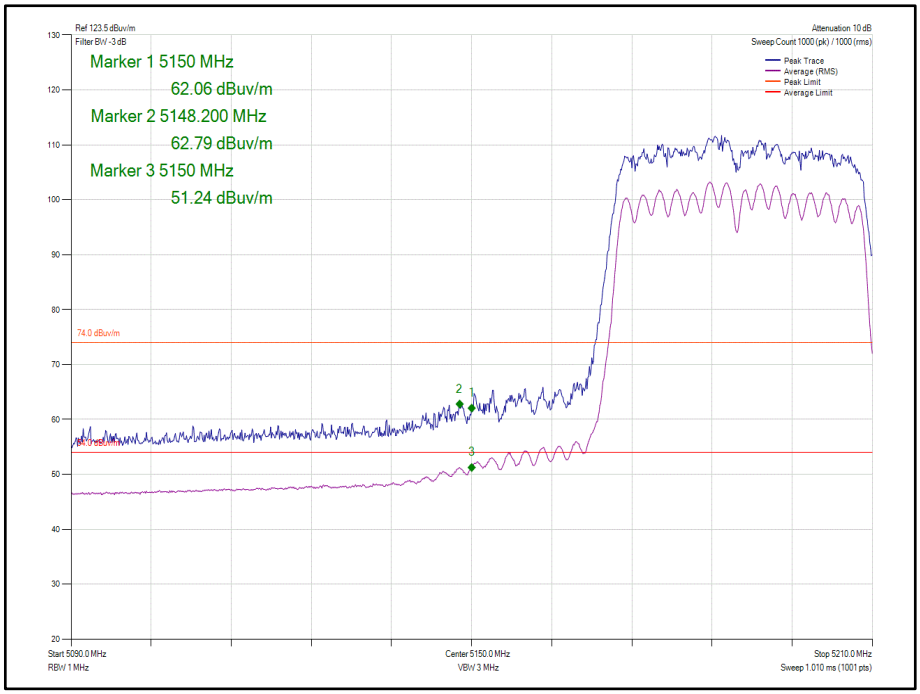


Figure 434 - 802.11n HT40 CDD Cores 0-1 - 5190 MHz Band Edge Frequency 5150 MHz

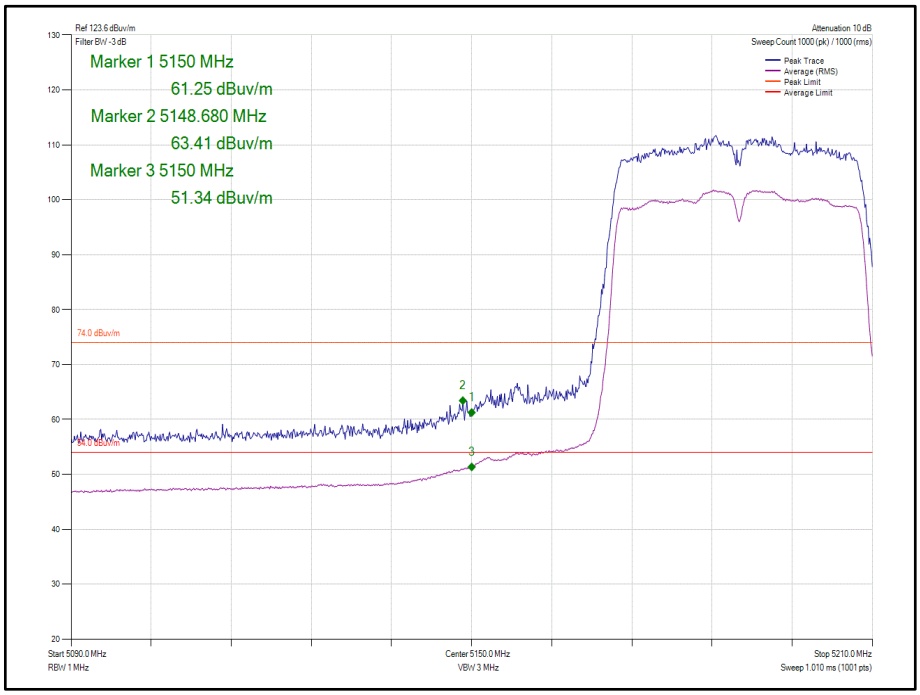


Figure 435 - 802.11n HT40 SDM Cores 0-1 - 5190 MHz Band Edge Frequency 5150 MHz

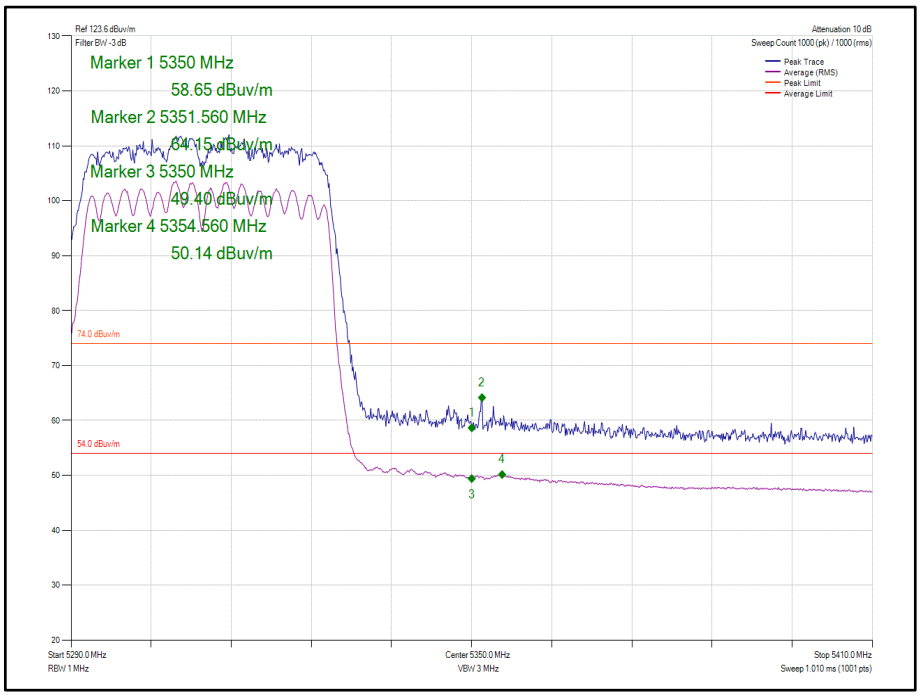


Figure 436 - 802.11n HT40 CDD Cores 0-1 - 5310 MHz Band Edge Frequency 5350 MHz

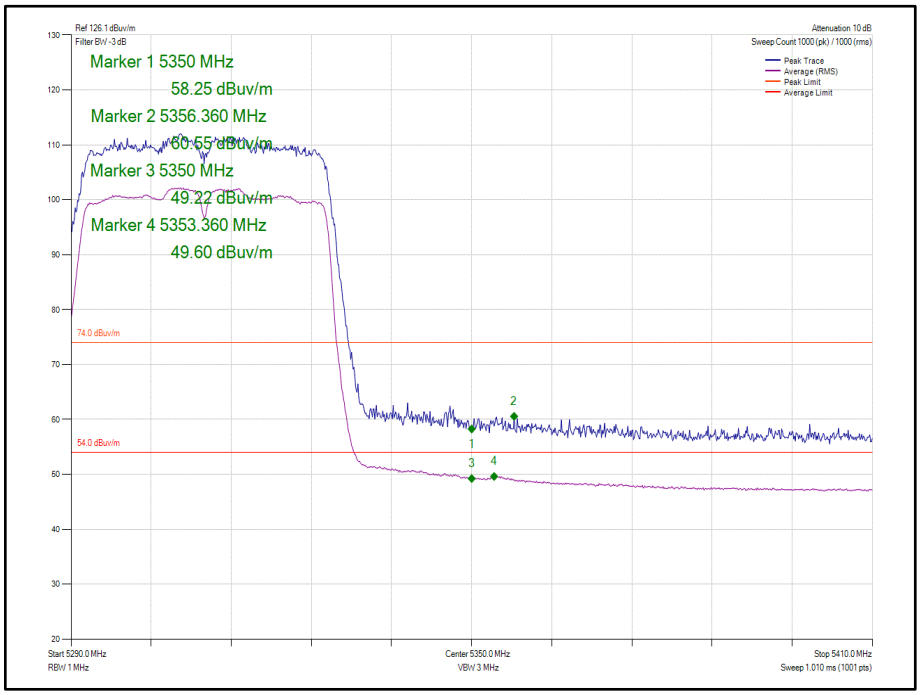


Figure 437 - 802.11n HT40 SDM Cores 0-1 - 5310 MHz Band Edge Frequency 5350 MHz

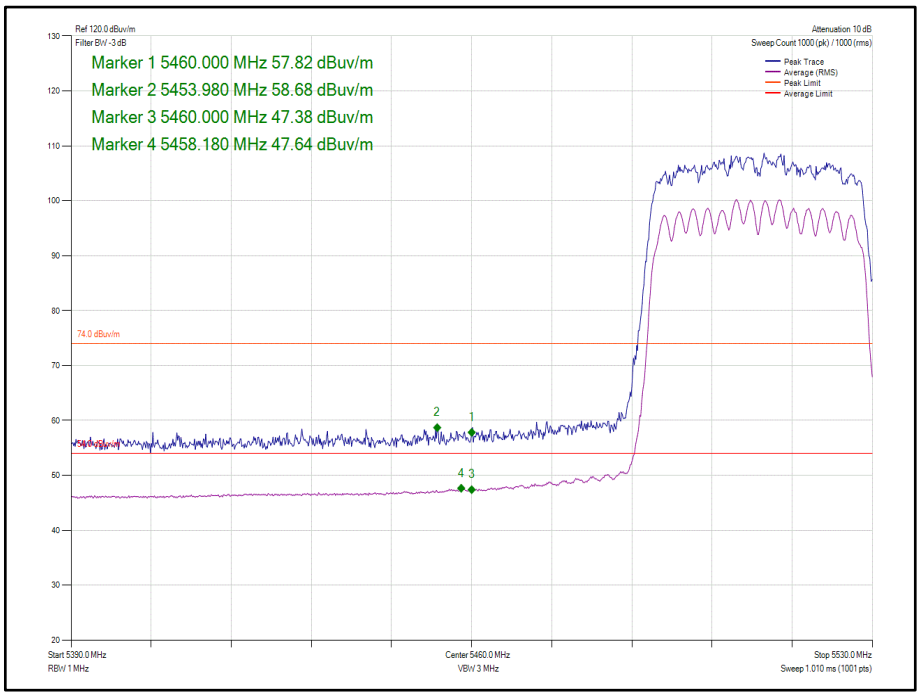


Figure 438 - 802.11n HT40 CDD Cores 0-1 - 5510 MHz Band Edge Frequency 5460 MHz

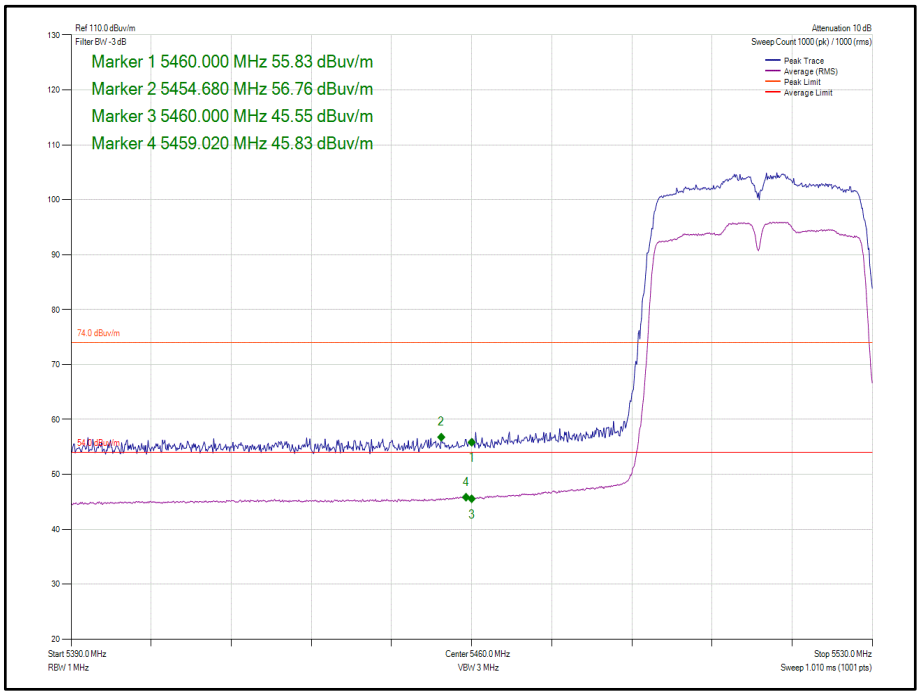


Figure 439 - 802.11n HT40 SDM Cores 0-1 - 5510 MHz Band Edge Frequency 5460 MHz

Mode	Modulation Coding Scheme	Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
802.11ac VHT80 Core 0	MCS0	5210	5150	62.79	51.33
802.11ac VHT80 Core 0	MCS0	5290	5350	60.69	49.06
802.11ac VHT80 Core 0	MCS0	5530	5460	58.09	46.57

Table 220 - SISO

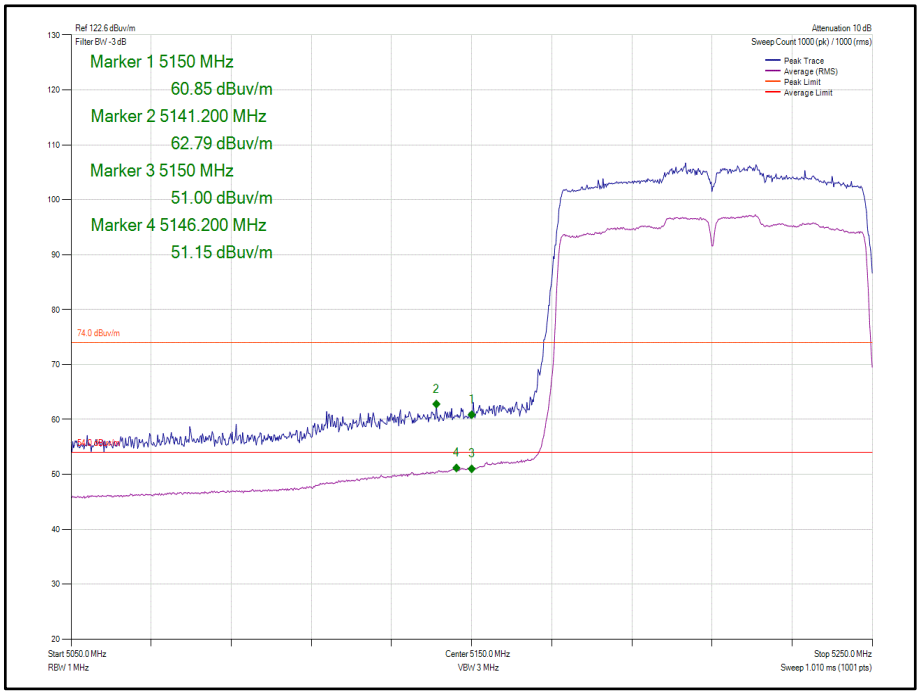


Figure 440 - 802.11ac VHT80 Core 0 - 5210 MHz
Band Edge Frequency 5150 MHz

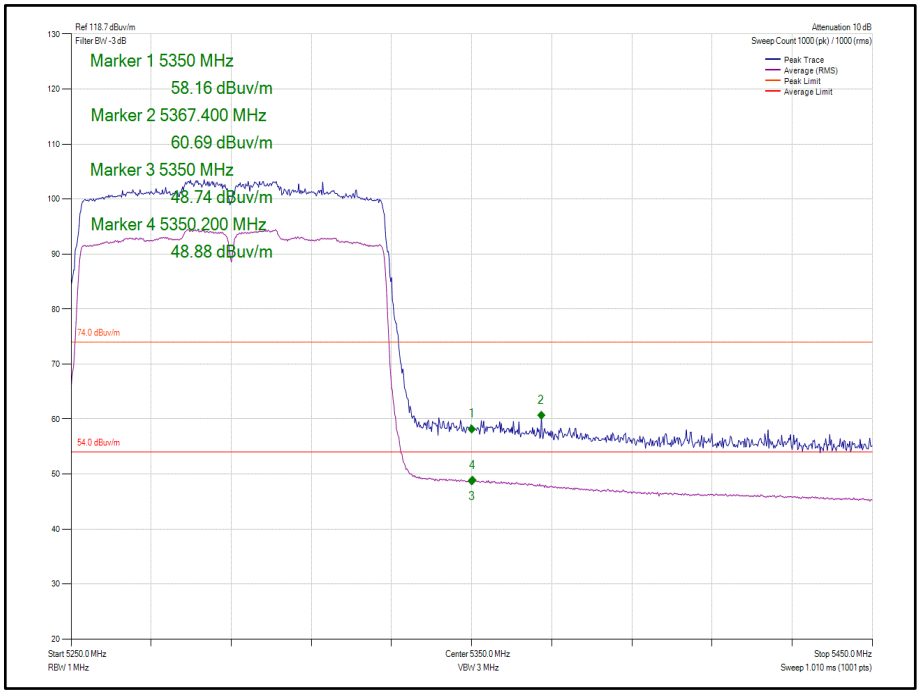


Figure 441 - 802.11ac VHT80 Core 0 - 5290 MHz Band Edge Frequency 5350 MHz

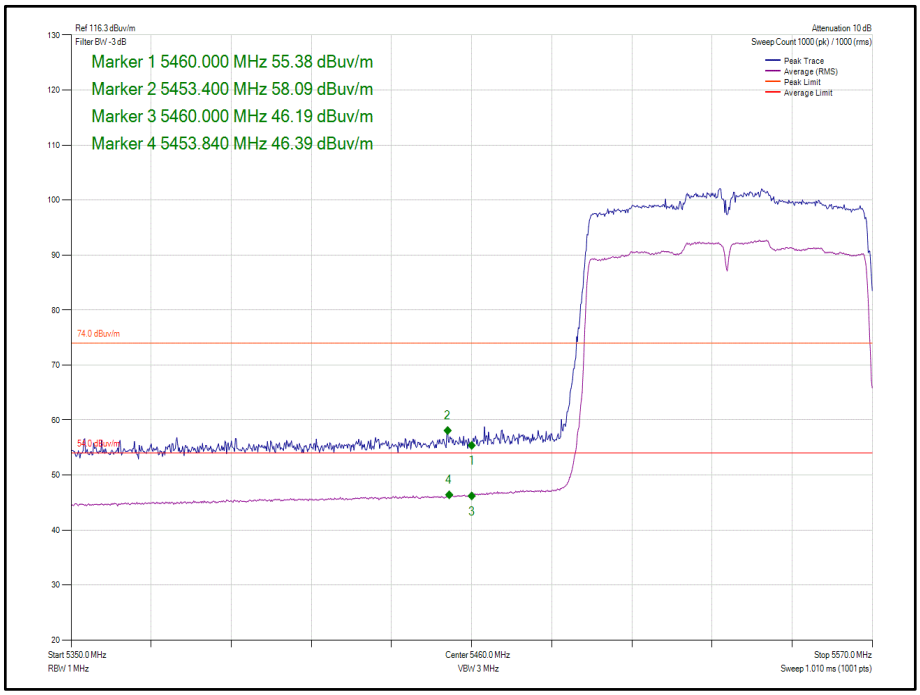


Figure 442 - 802.11ac VHT80 Core 0 - 5530 MHz Band Edge Frequency 5350 MHz

Mode	Modulation Coding Scheme	Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
802.11ac VHT80 CDD Cores 0-1	MCS0	5210	5150	63.05	51.03
802.11ac VHT80 SDM Cores 0-1	MCS0	5210	5150	63.00	51.42
802.11ac VHT80 CDD Cores 0-1	MCS0	5290	5350	62.40	51.46
802.11ac VHT80 SDM Cores 0-1	MCS0	5290	5350	62.38	51.60
802.11ac VHT80 CDD Cores 0-1	MCS0	5530	5460	58.28	47.97
802.11ac VHT80 SDM Cores 0-1	MCS0	5530	5460	58.96	47.94

Table 221 - MIMO 2TX

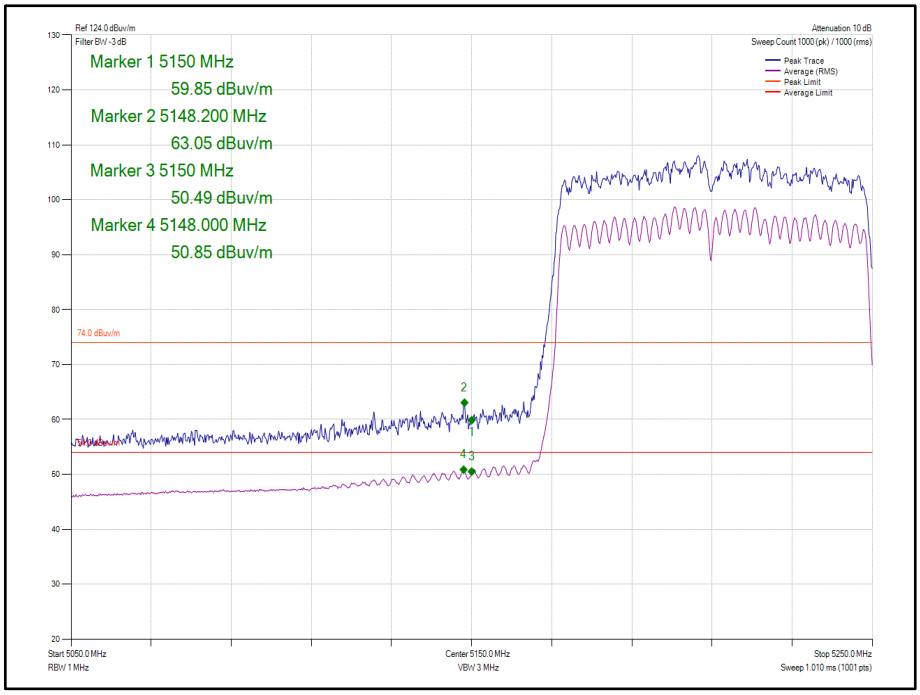


Figure 443 - 802.11ac VHT80 CDD Cores 0-1- 5210 MHz Band Edge Frequency 5150 MHz

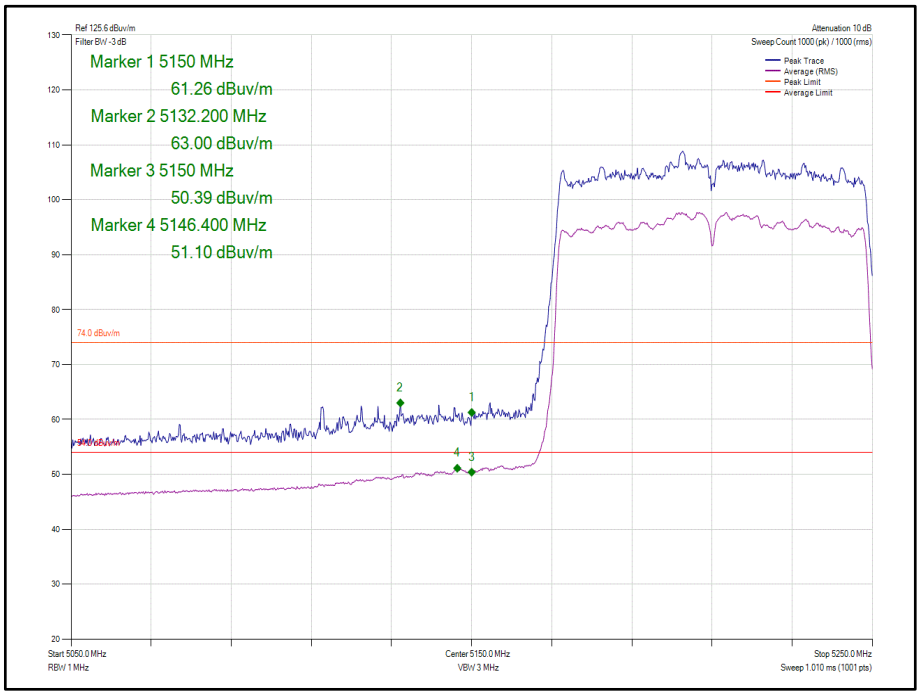


Figure 444 - 802.11ac VHT80 SDM Cores 0-1- 5210 MHz Band Edge Frequency 5150 MHz

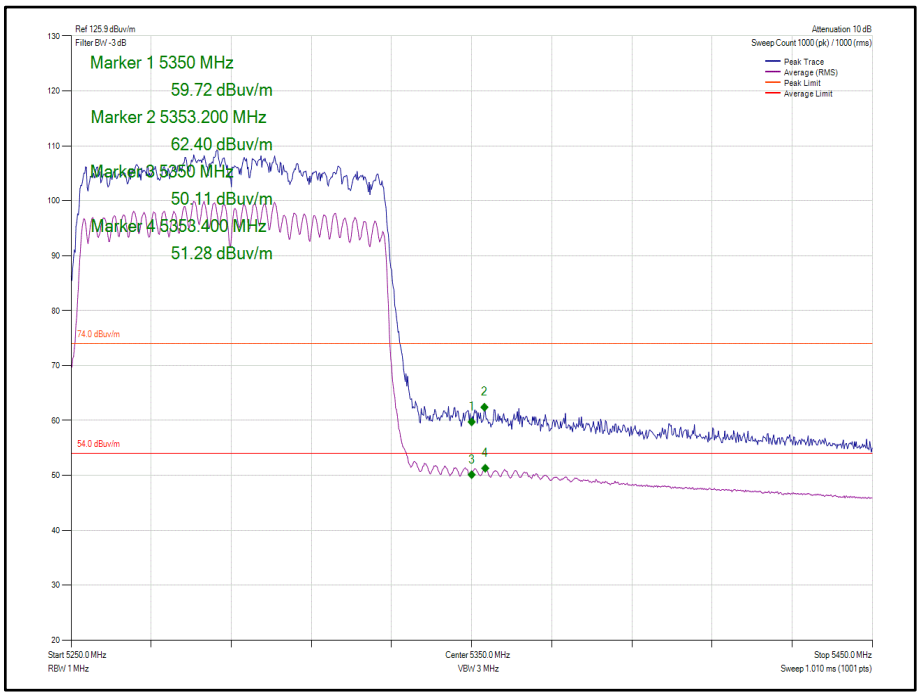


Figure 445 - 802.11ac VHT80 CDD Cores 0-1- 5290 MHz Band Edge Frequency 5350 MHz

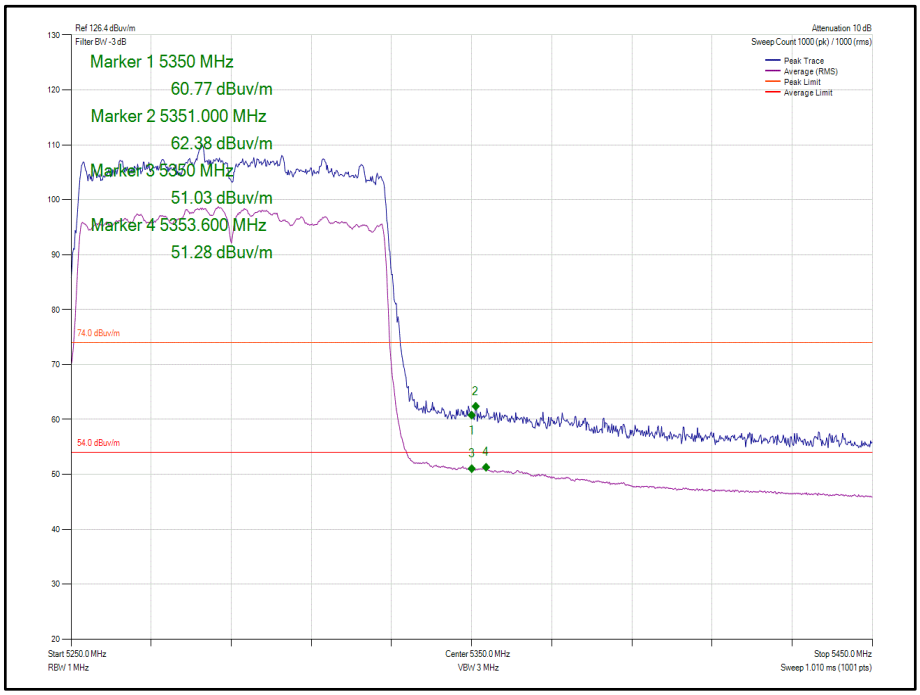


Figure 446 - 802.11ac VHT80 SDM Cores 0-1- 5290 MHz Band Edge Frequency 5350 MHz

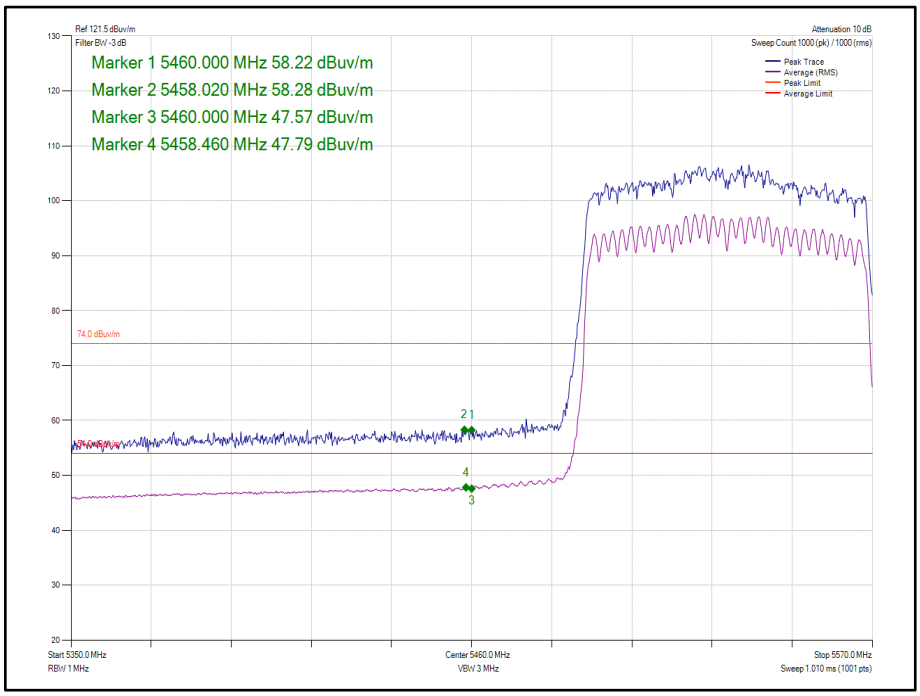


Figure 447 - 802.11ac VHT80 CDD Cores 0-1- 5530 MHz Band Edge Frequency 5460 MHz

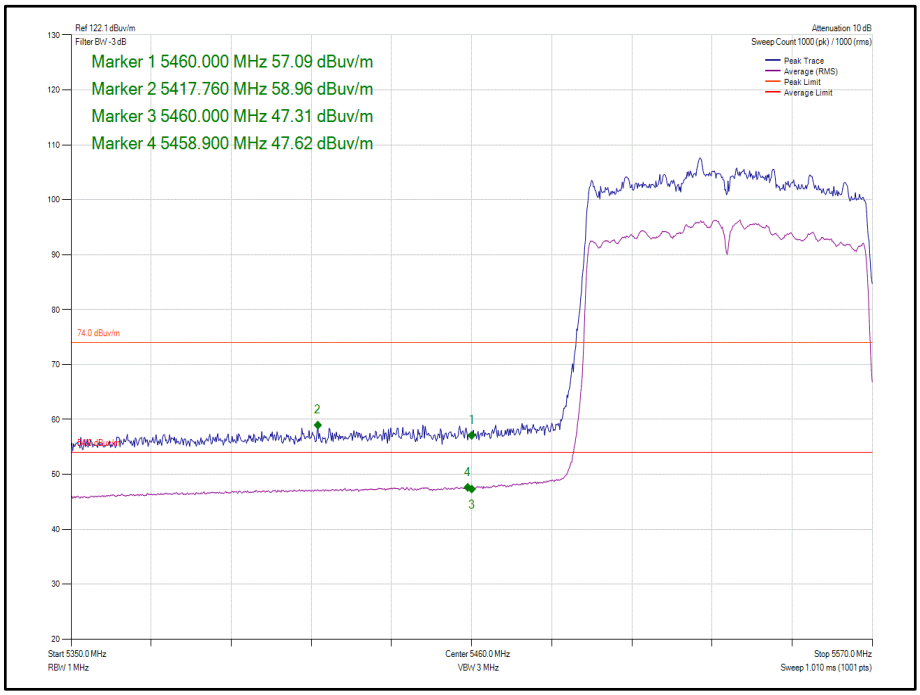


Figure 448 - 802.11ac VHT80 SDM Cores 0-1- 5530 MHz Band Edge Frequency 5460 MHz

FCC 47 CFR Part 15, Limit Clause 15.205 and ISEDC RSS-GEN Limit Clause 8.10

	Peak (dBµV/m)	Average (dBµV/m)
Restricted Bands of Operation	74	54

Table 222 - Restricted Band Edge Limit Table

2.5.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
10dB/1W SMA Attenuator dc - 18GHz	Sealectro	60-674-1010-89	395	-	O/P Mon
1GHz to 8GHz Low Noise Amplifier	Wright Technologies	APS04-0085	4365	12	14-Nov-2020
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	11-Mar-2020
Hygrometer	Rotronic	HP21	4989	12	02-May-2020
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	28-Nov-2020
Cable (18 GHz)	Rosenberger	LU7-071-1000	5103	12	06-Oct-2020
Cable (18 GHz)	Rosenberger	LU7-071-1000	5104	12	09-Dec-2020
Cable (18 GHz)	Rosenberger	LU7-071-1000	5105	12	06-Oct-2020
Cable (18 GHz)	Rosenberger	LU7-071-2000	5107	12	06-Oct-2020
EmX Emissions Software	TUV SUD	EmX	5125	-	Software
Screened Room (11)	Rainford	Rainford	5136	36	01-Nov-2021
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
8 Meter Cable	Teledyne	PR90-088-8MTR	5212	12	30-Aug-2020
Horn Antenna (1-10GHz)	Schwarzbeck	BBHA 9120 B	5215	12	11-Mar-2020
Pre Amp 1 - 26.5 GHz	Agilent Technologies	8449B	5445	-	O/P Mon

Table 223

TU - Traceability Unscheduled
O/P Mon - Output Monitored using calibrated equipment

2.6 Spurious Radiated Emissions

2.6.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (b) and 15.205
ISEDC RSS-247, Clause 6.2

2.6.2 Equipment Under Test and Modification State

A2289, S/N: C02ZG009P09V - Modification State 0

2.6.3 Date of Test

14- December -2019 to 19-December-2019

2.6.4 Test Method

Testing was performed in accordance with ANSI C63.10 clause 6.3, 6.5 and 6.6.

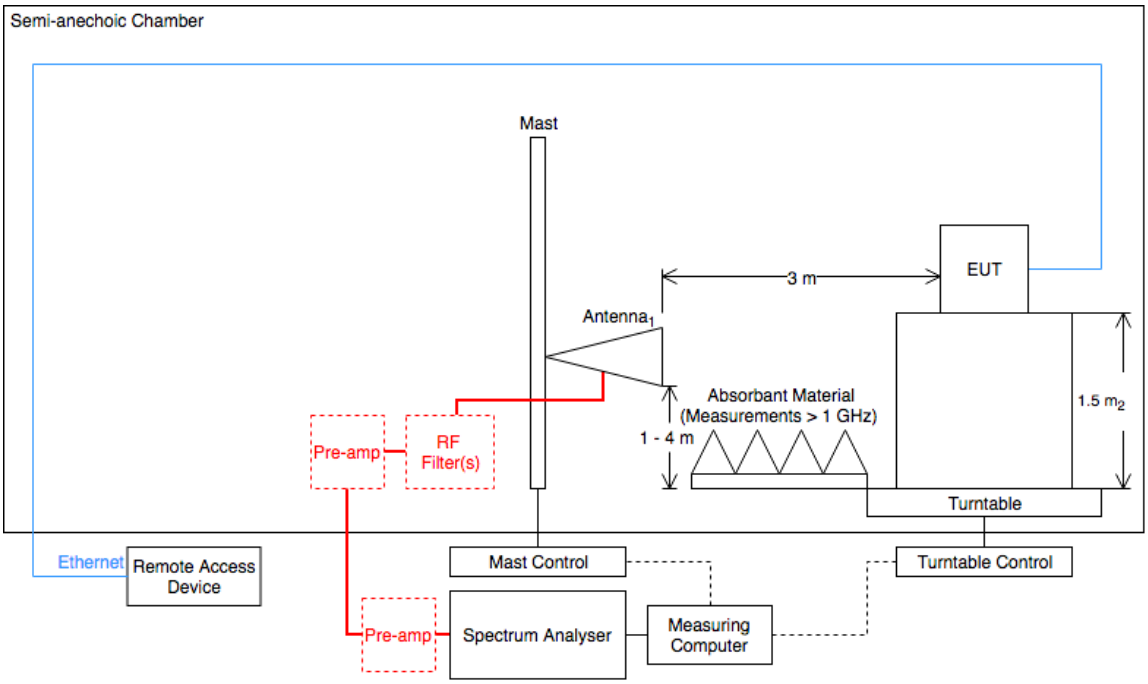
Tests were performed in HT20 CDD in 2TX MIMO mode, with measurements undertaken from 30MHz to 40GHz, on channel 36 (5180MHz) and channel 165 (5825MHz). For the purpose of this testing, spurious emissions were limited to 1GHz to 40GHz on all other test channels.

Plots for average measurements were taken in accordance with ANSI C63.10 clause 12.7.7.2 with max-hold trace to characterize the EUT. Where emissions were detected, final average measurements were taken in accordance with ANSI C63.10-2013 clause 4.1.4.2.2.

The plots shown are the characterization of the EUT. The limits on the plots represent the most stringent case for restricted bands, (approx. 54/74 dBuV/m @ 3m and 64/84 dBuV/m @ 1m) when compared to -27 dBm/MHz EIRP outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBµV/m to µV/m:
10^((Field Strength in dBµV/m)/20).

EIRP was converted to field strength at 3m using the following formula:
Field Strength (dBµV/m at 3m) = EIRP (dBm) + 95.2 dB



1 Antenna is boresighted for measurements < 1 GHz.
2 Height from the EUT to ground is 0.8 m for measurements < 1 GHz.

Figure 449 - Radiated Emissions Test Setup Diagram

2.6.5 Environmental Conditions

Ambient Temperature	21.8 °C
Relative Humidity	50.9 %

2.6.6 Test Results

5 GHz WLAN

Testing was performed with the device operating at maximum output power, HT20 CDD MIMO 2TX, as this was deemed to be worst case.

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
249.4	21.7	46.0	-24.6	QP	353.0	110	Vertical	-
250.0	27.8	46.0	-18.2	QP	0.0	107	Vertical	-

Table 224 –30 MHz to 1 GHz – Emissions Results

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
10641.05	33.05	54.00	-20.95	Average	285	169	Vertical	-
11398.883	33.16	54.00	-20.84	Average	205	134	Vertical	-
11490.133	31.45	54.00	-22.55	Average	205	141	Vertical	-

Table 225 – 1 GHz to 40 GHz - Emissions Results

*No emissions were detected within 10 dB of the limit.

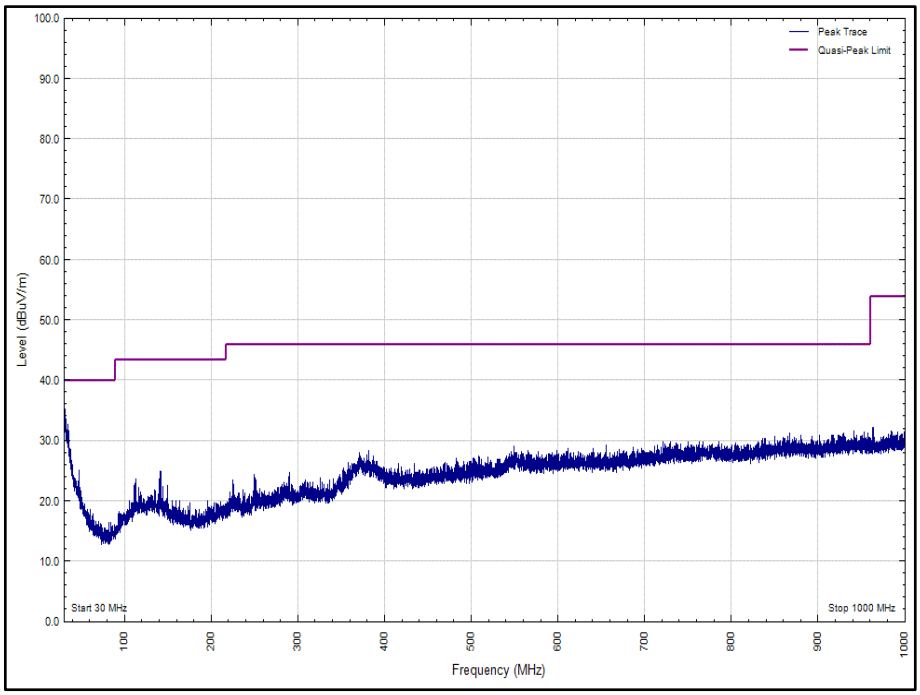


Figure 450 - U-NII 1 - 5180 MHz - 30 MHz to 1 GHz - Polarity: Horizontal (Peak)

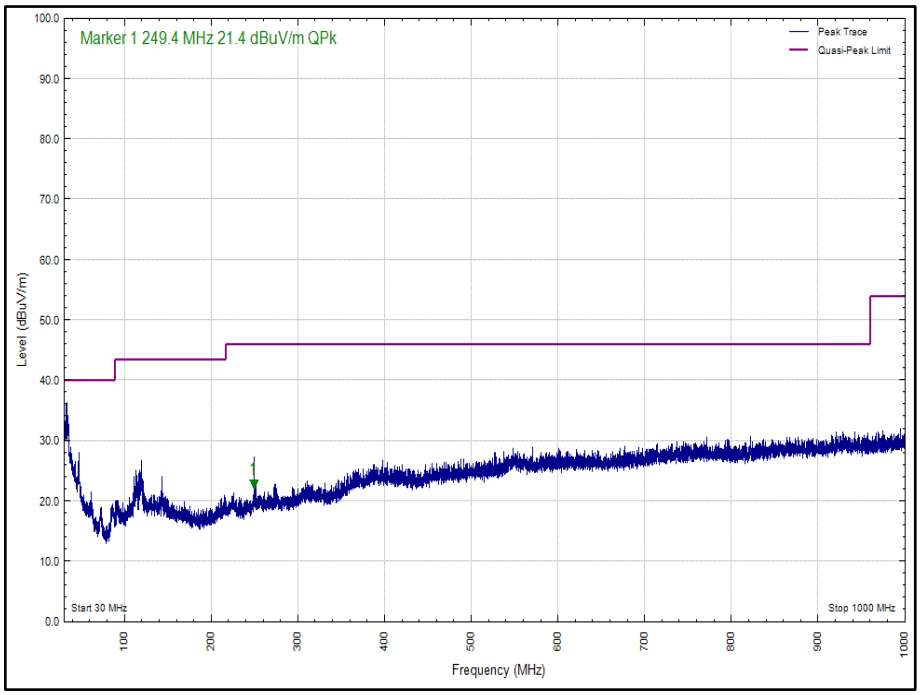


Figure 451 - U-NII 1 - 5180 MHz - 30 MHz to 1 GHz - Polarity: Vertical (Peak)

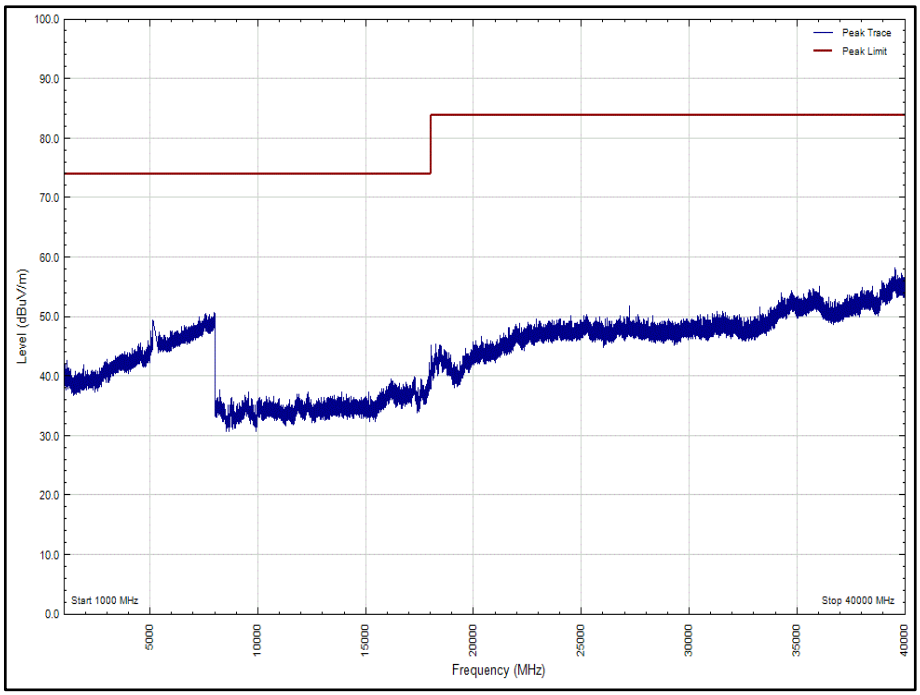


Figure 452 - U-NII 1 - 5180 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Peak)

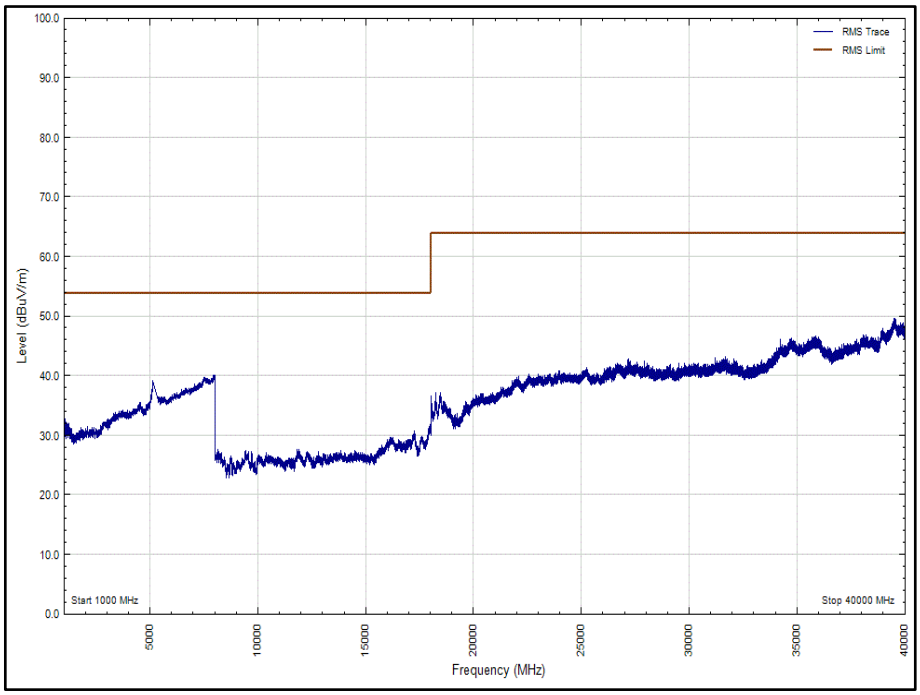


Figure 453 - U-NII 1 - 5180 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Average)

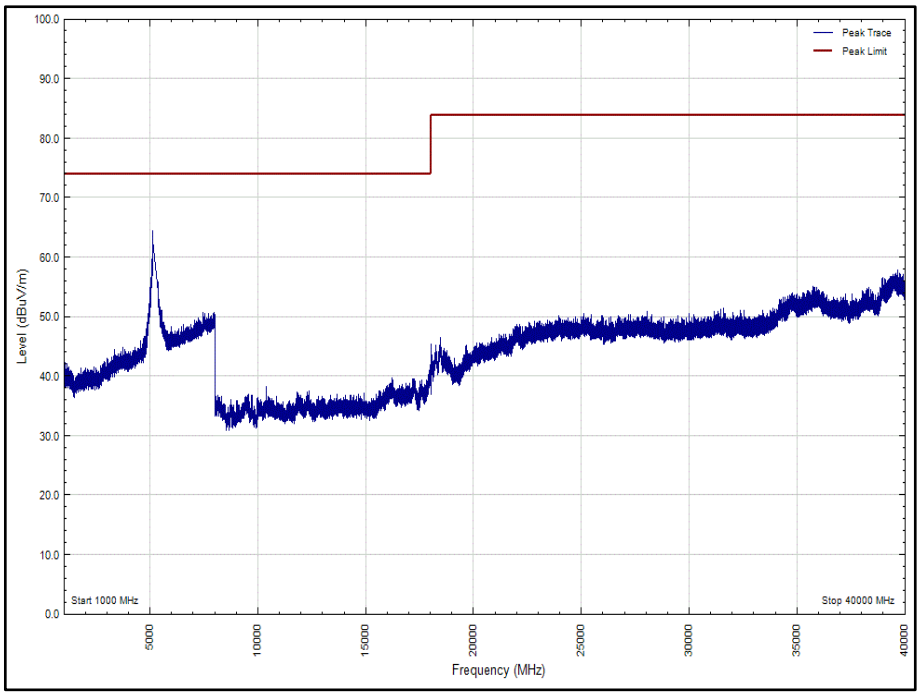


Figure 454 - U-NII 1 - 5180 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Peak)

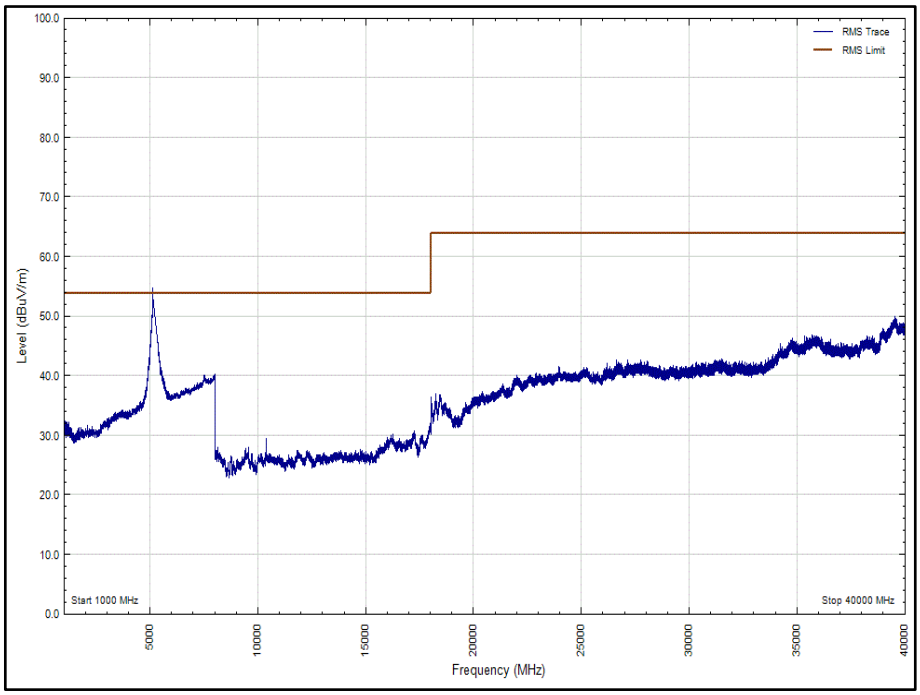


Figure 455 - U-NII 1 - 5180 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Average)

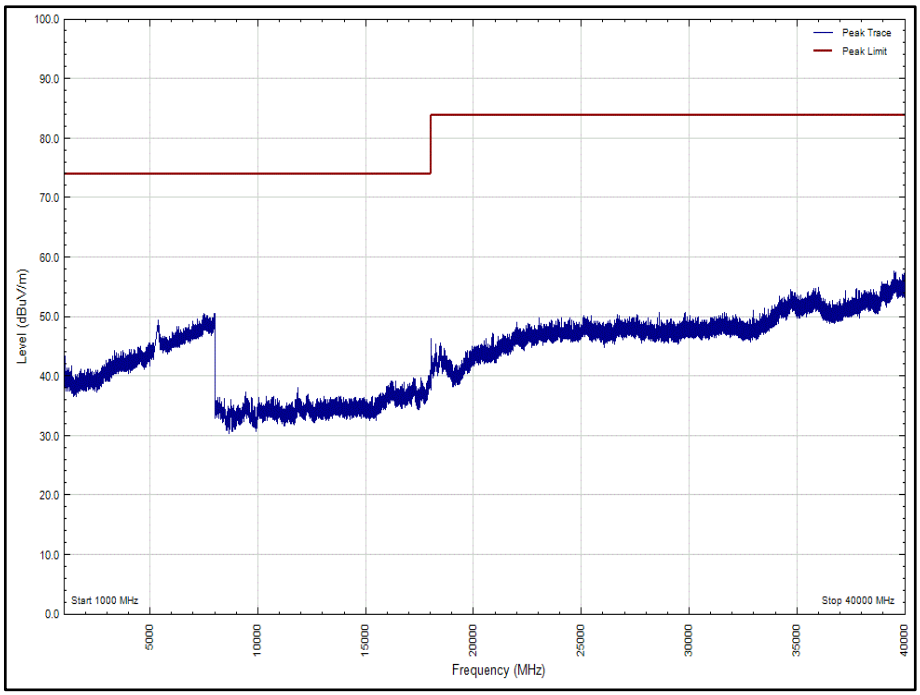


Figure 456 - U-NII 2a - 5320 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Peak)

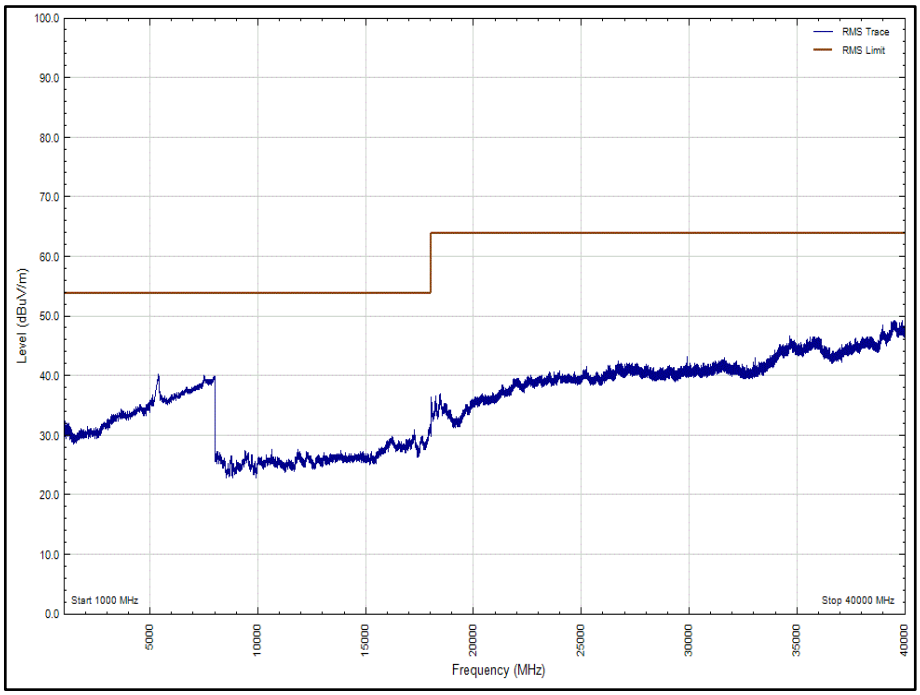


Figure 457 - U-NII 2a - 5320 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Average)

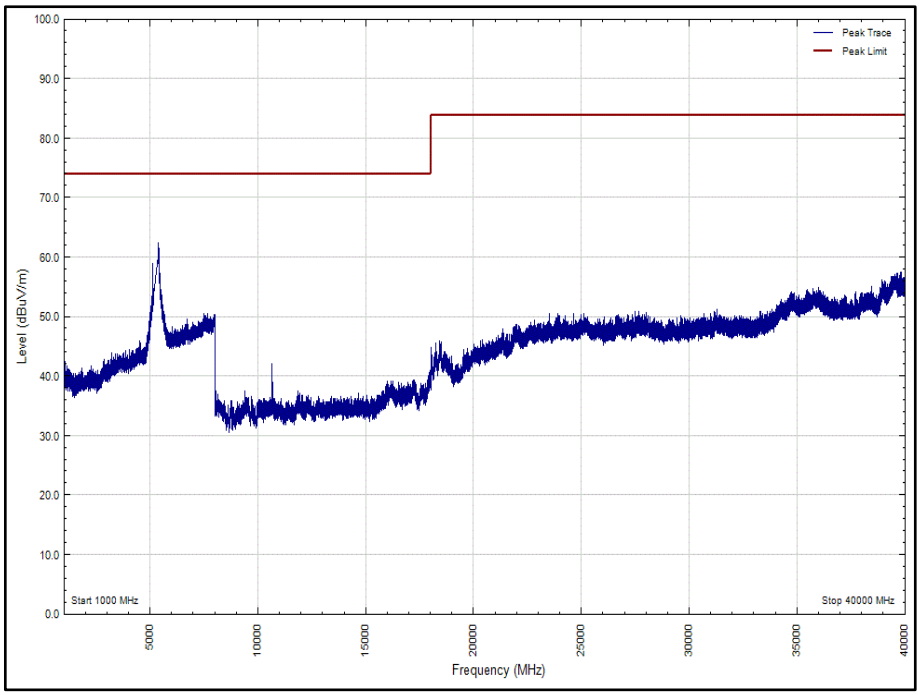


Figure 458 - U-NII 2a - 5320 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Peak)

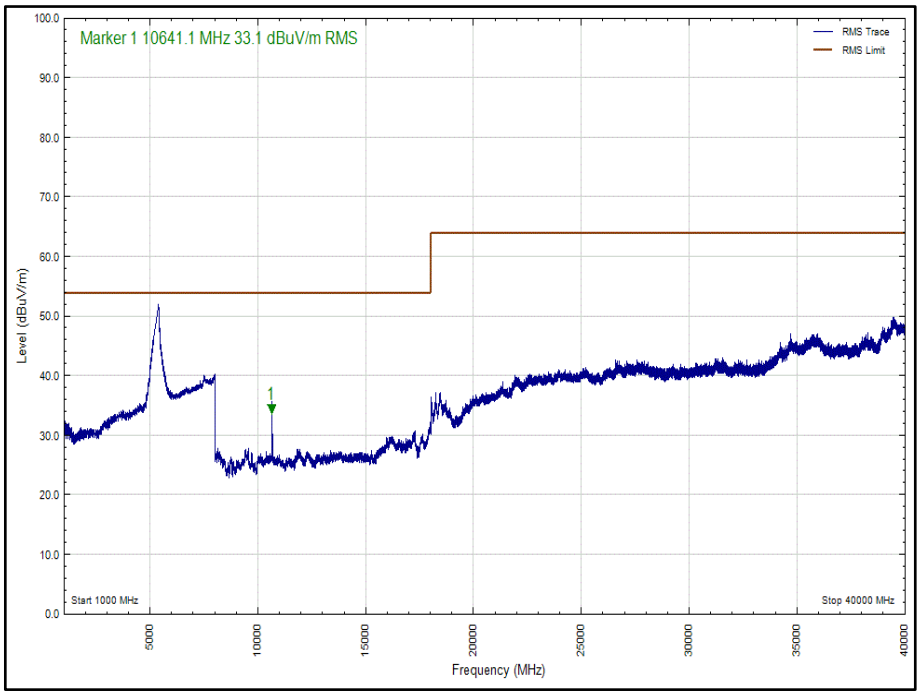


Figure 459 - U-NII 2a - 5320 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Average)

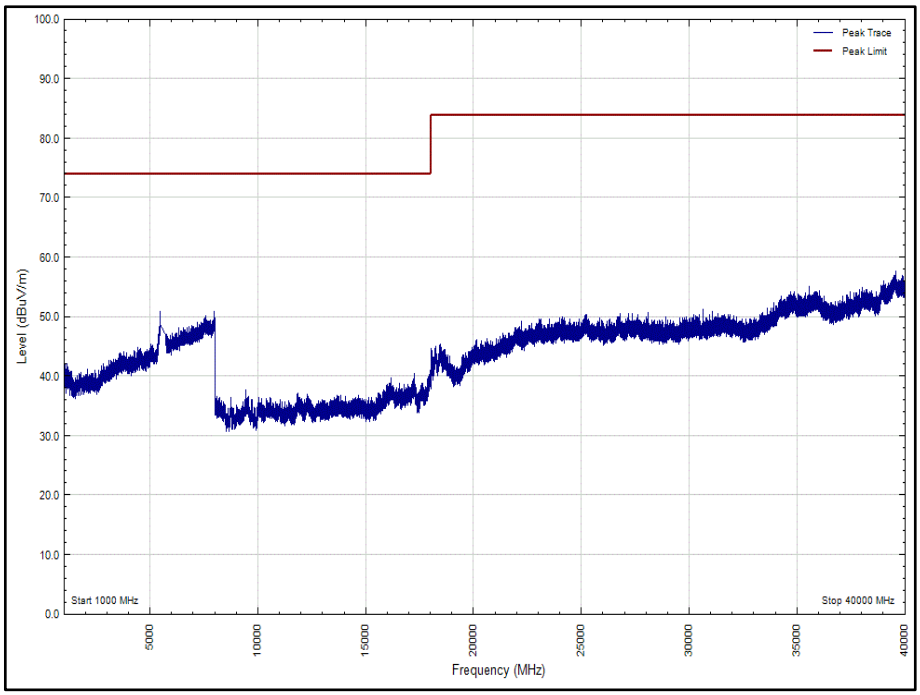


Figure 460 - U-NII 2c - 5500 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Peak)

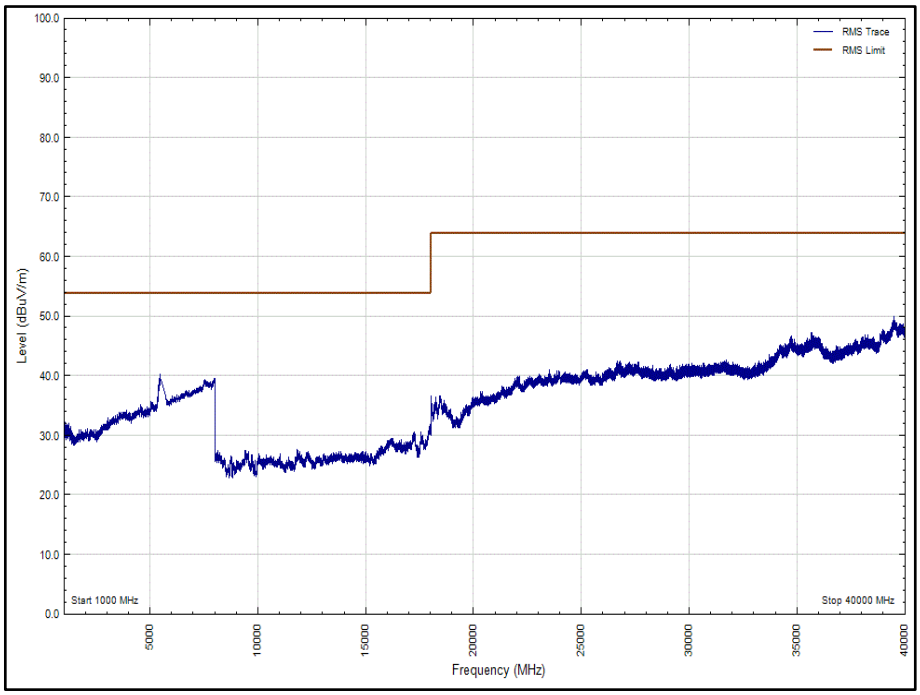


Figure 461 - U-NII 2c - 5500 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Average)

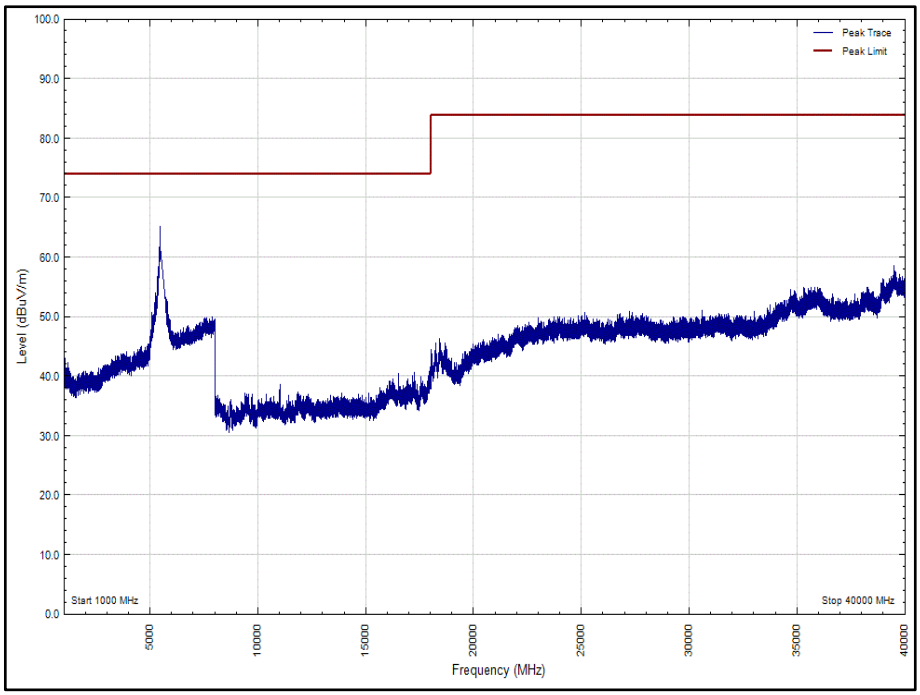


Figure 462 - U-NII 2c - 5500 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Peak)

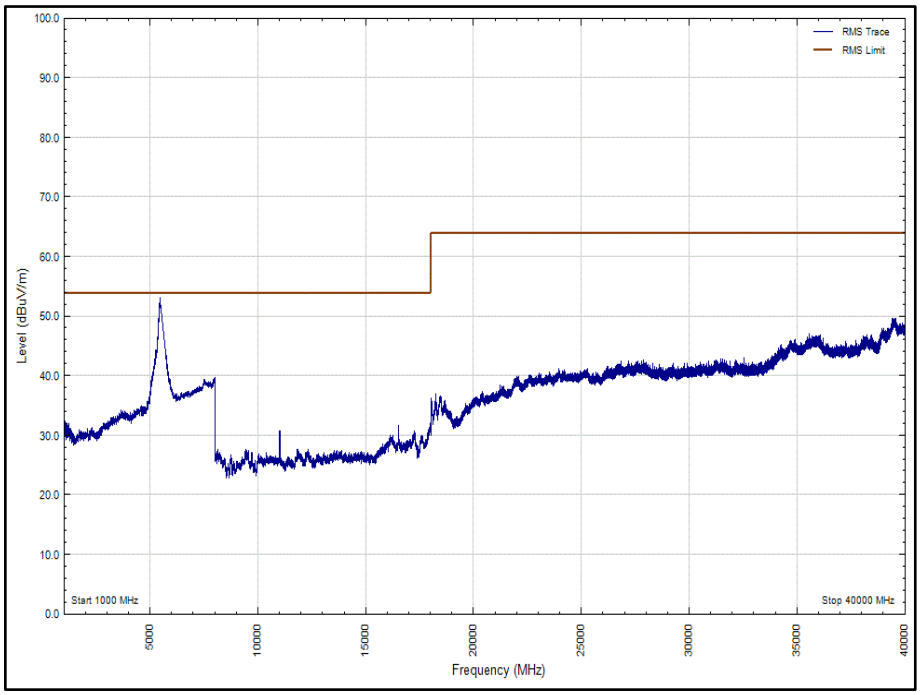


Figure 463 - U-NII 2c - 5500 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Average)

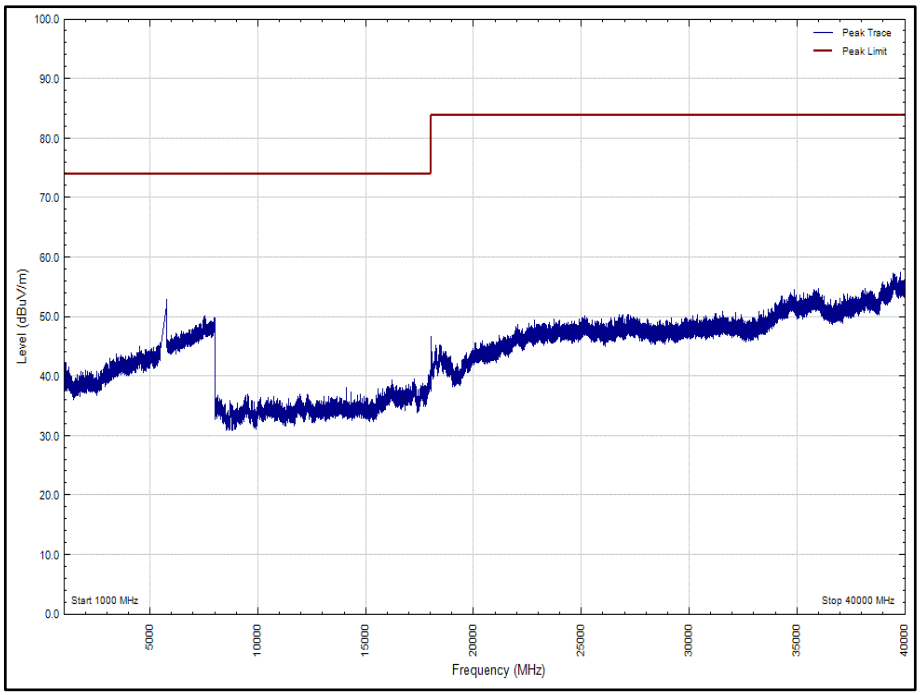


Figure 464 - U-NII 2c - 5700 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Peak)

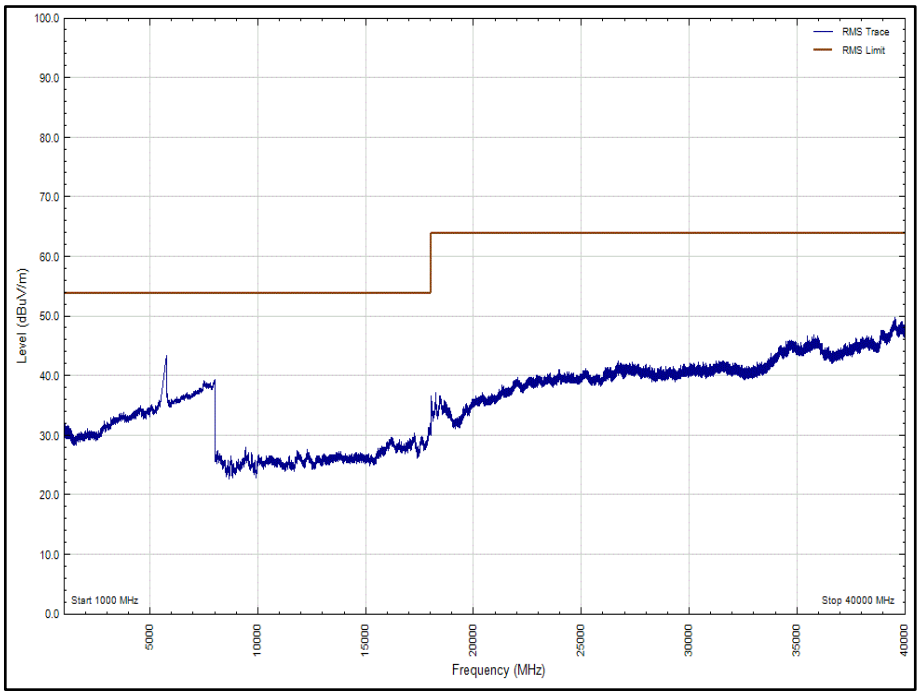


Figure 465 - U-NII 2c - 5700 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Average)

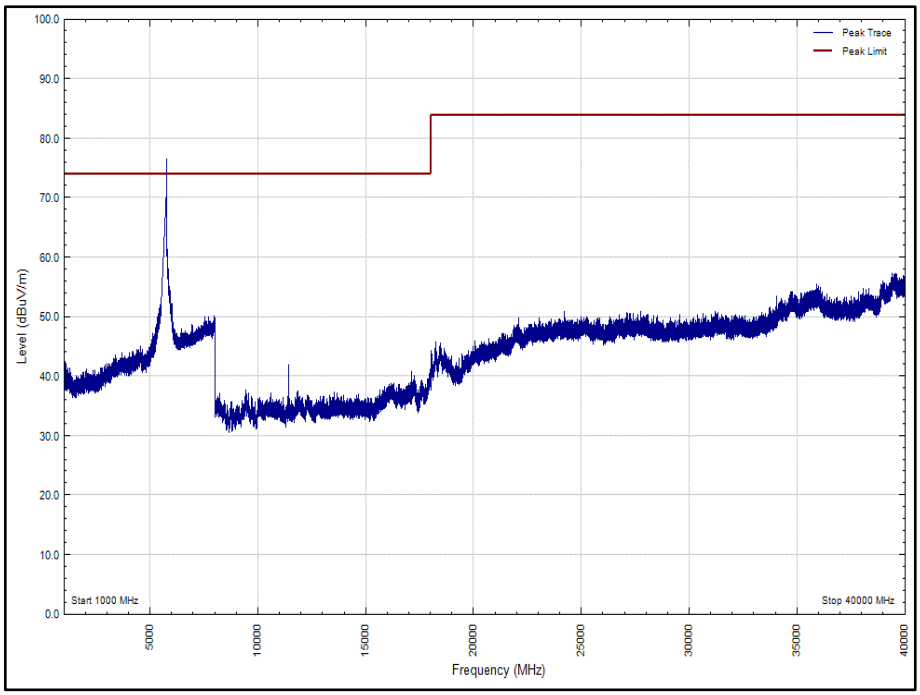


Figure 466 - U-NII 2c - 5700 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Peak)

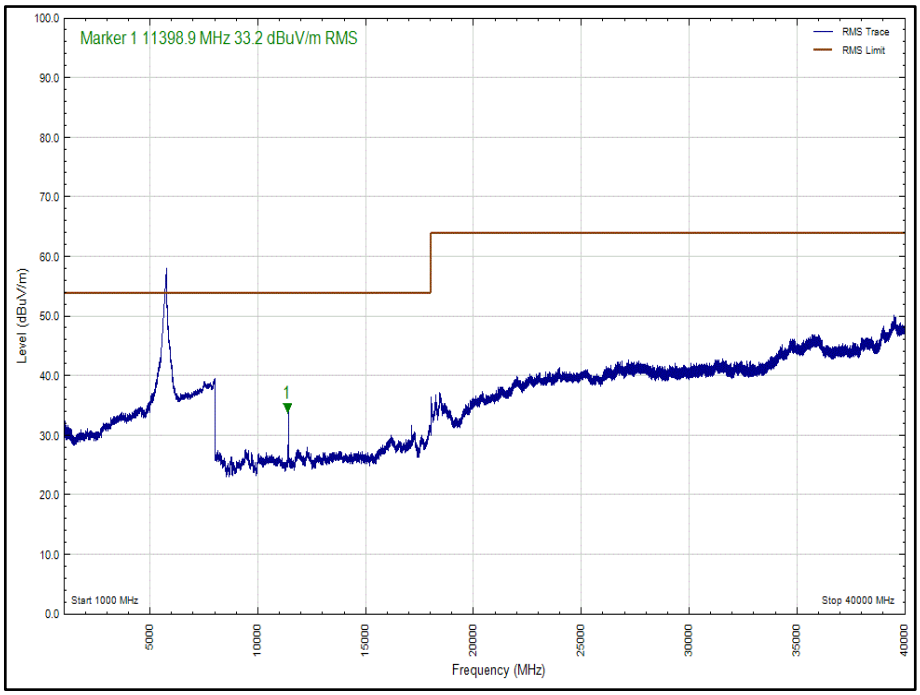


Figure 467 - U-NII 2c - 5700 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Average)

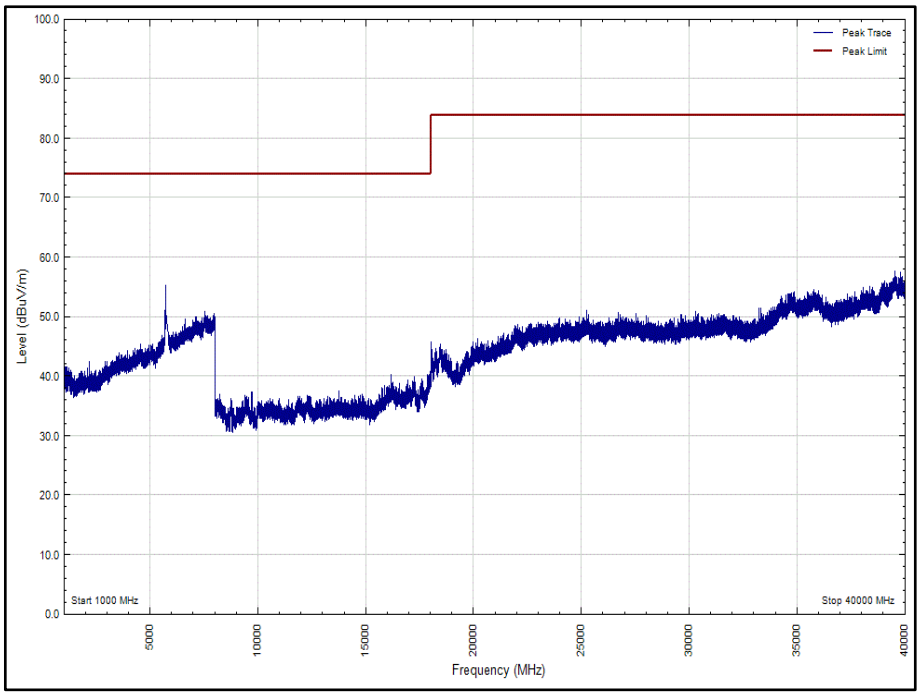


Figure 468 - U-NII 3 - 5745 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Peak)

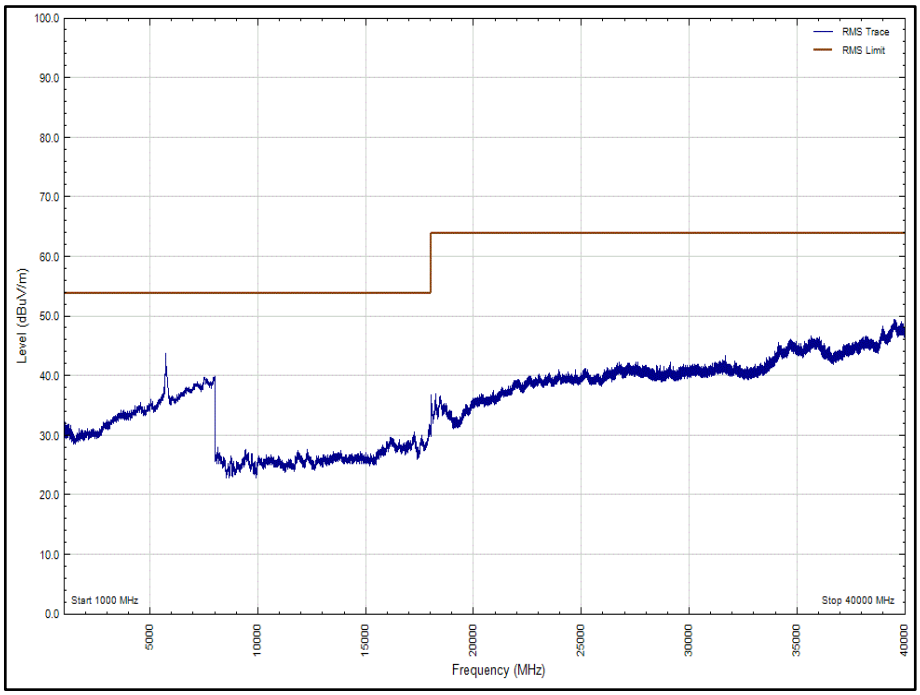


Figure 469 - U-NII 3- 5745 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Average)

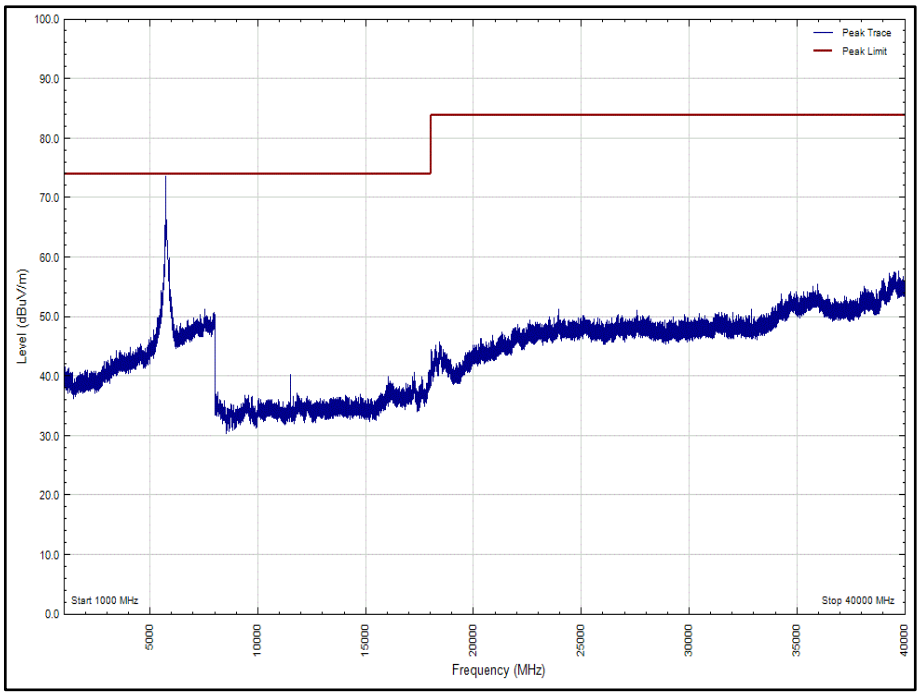


Figure 470 - U-NII 3 - 5745 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Peak)

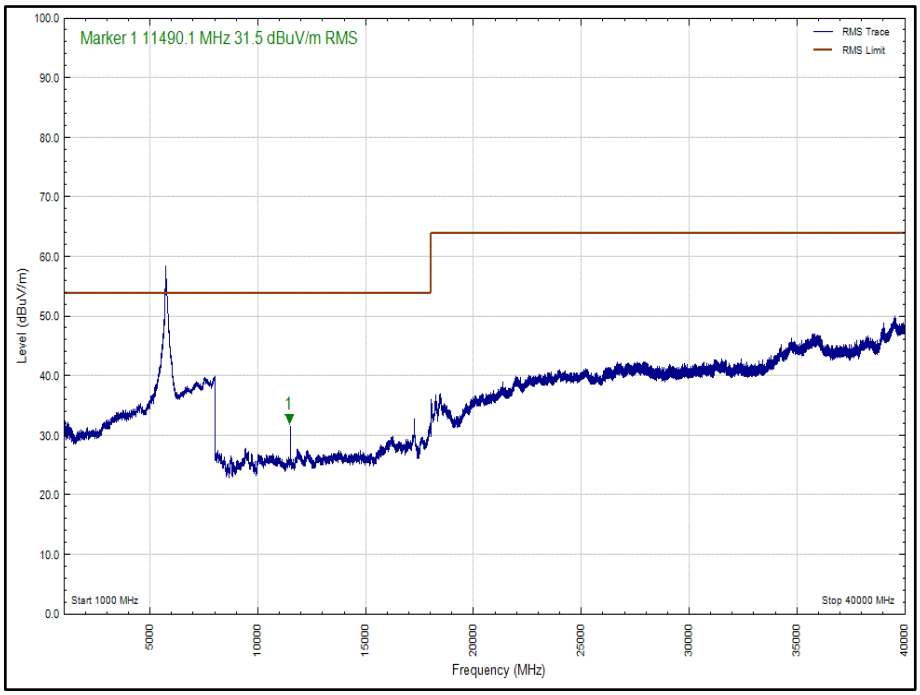


Figure 471 - U-NII 3 - 5745MHz - 1 GHz to 40 GHz - Polarity: Vertical (Average)

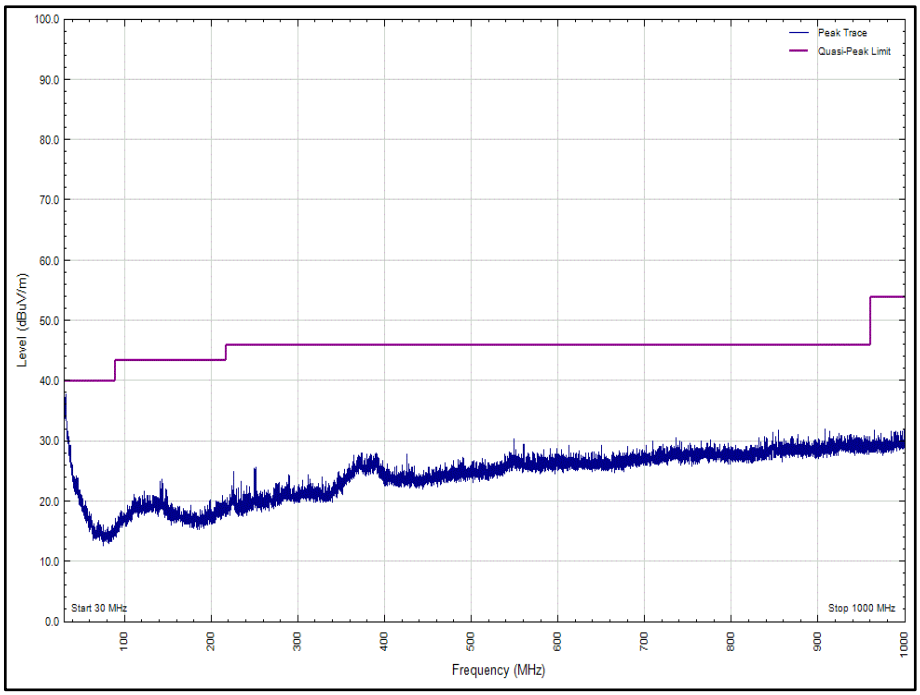


Figure 472 - U-NII 3 - 5825 MHz – 30MHz to 1 GHz - Polarity: Horizontal (Peak)

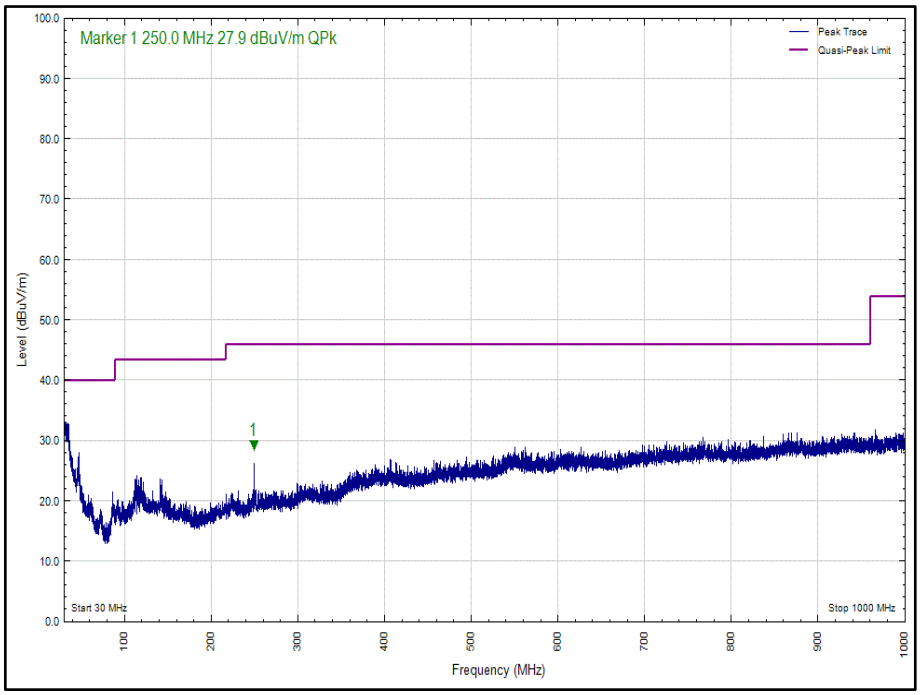


Figure 473 - U-NII 3 - 5825 MHz – 30MHz to 1 GHz - Polarity: Vertical (Peak)

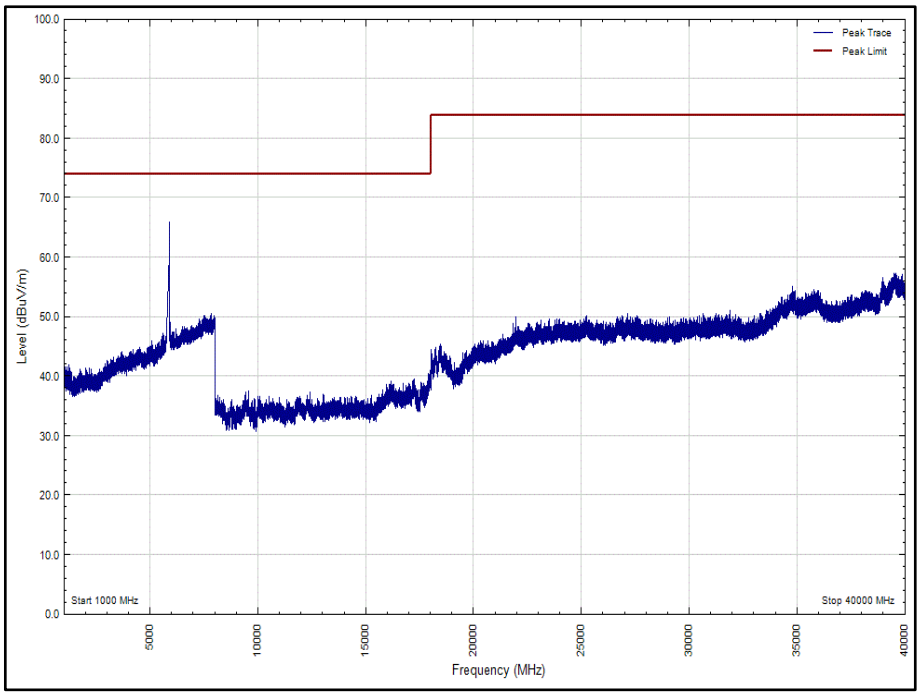


Figure 474 - U-NII 3 - 5825 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Peak)

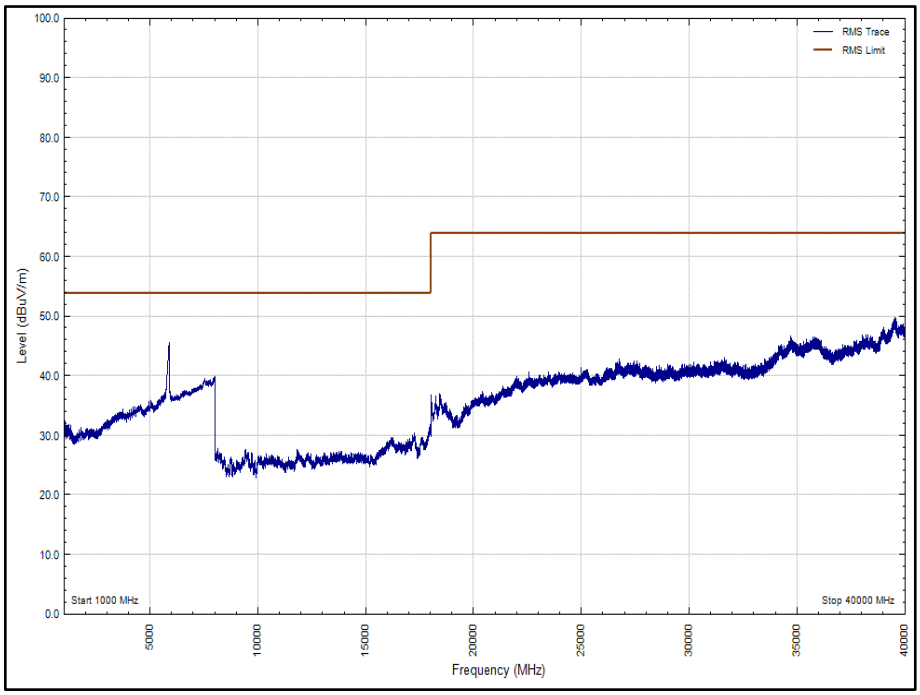


Figure 475 - U-NII 3 - 5825 MHz - 1 GHz to 40 GHz - Polarity: Horizontal (Average)

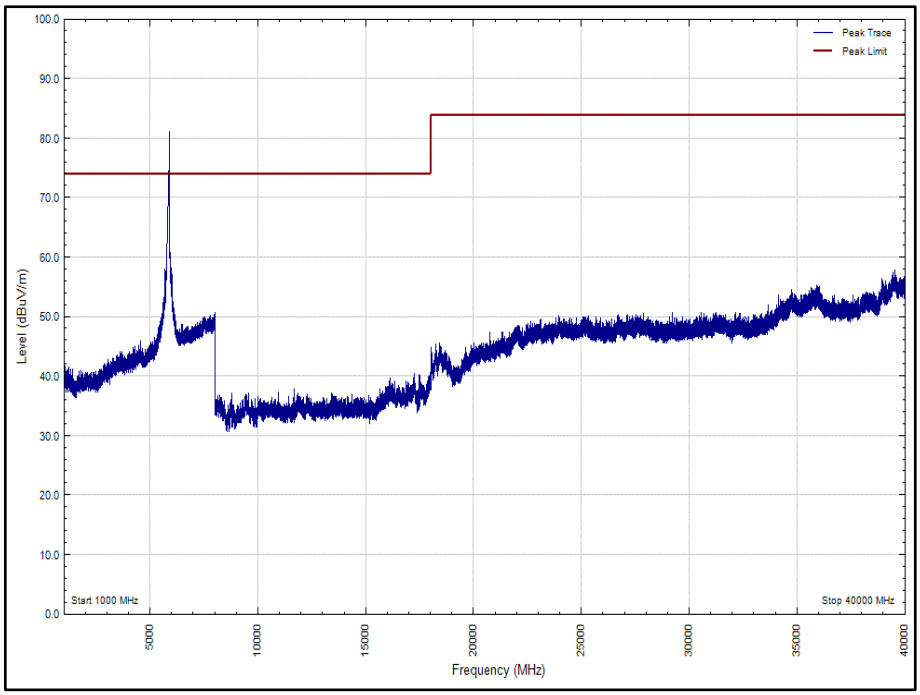


Figure 476 - U-NII 3 - 5825 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Peak)

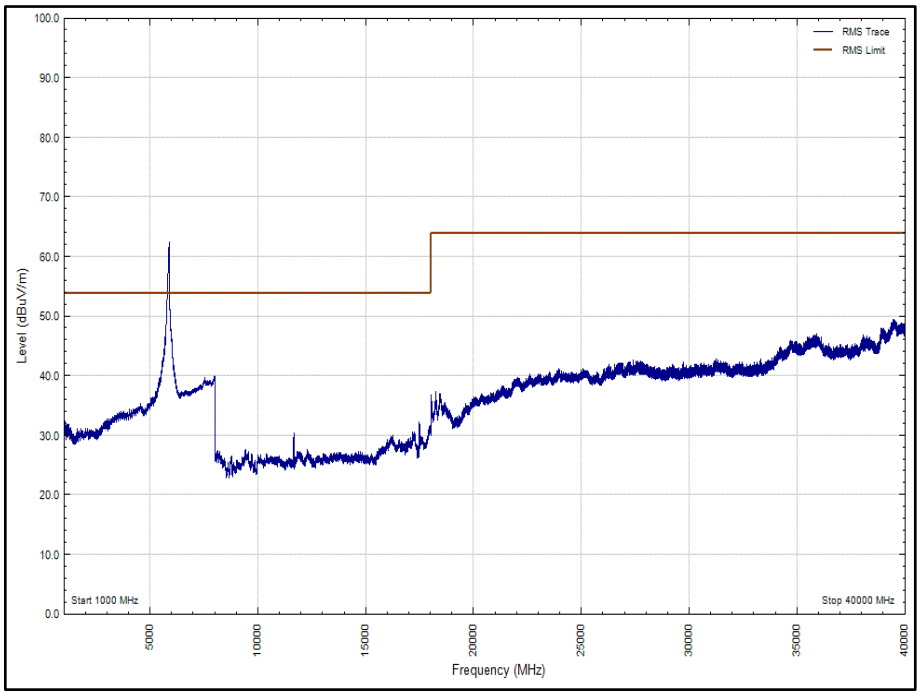


Figure 477 - U-NII 3- 5825 MHz - 1 GHz to 40 GHz - Polarity: Vertical (Average)

FCC 47 CFR Part 15, Limit Clause 15.407(b)(1)(2)(3)(4)

Emissions not falling within the restricted bands listed in FCC 47 CFR Part 15.209:

For transmitters operating in the 5.15-5.25 GHz band: ≤-27 dBm/MHz outside 5150-5350 MHz.
For transmitters operating in the 5.25-5.35 GHz band: ≤-27 dBm/MHz outside 5150-5350 MHz.
For transmitters operating in the 5.47-5.725 GHz band: ≤-27 dBm/MHz outside 5470-5725 MHz

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Emissions within the restricted bands listed in FCC 47 CFR Part 15.209:

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
0.009 to 0.490	2400/F(kHz)	300
0.490 to 1.705	24000/F(kHz)	30
1.705 to 30	30	30
30 to 88	100	3
88 to 216	150	3
216 to 960	200	3
Above 960	500	3

Table 226 - Radiated Emissions Limit Table (FCC)

ISEDC RSS-247, Limit Clause 6.2.1.2, 6.2.2.2, 6.2.3.2 and 6.2.4.2 and ISEDC RSS-GEN, Limit Clause 8.9

Emissions not falling within the restricted bands listed in ISEDC RSS-GEN, Clause 8.10:

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB.

For transmitters with operating frequencies in the bands 5250-5350 MHz and 5470-5725 MHz, all emissions outside the band 5250-5350 MHz and 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

Emissions not falling within the restricted bands listed in ISEDC RSS-GEN, Clause 8.10:

Frequency (MHz)	Field Strength (µV/m)
0.009 to 0.490	2400/F(kHz)
0.490 to 1.705	24000/F(kHz)
1.705 to 30	30
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

Table 227 - Radiated Emissions Limit Table (ISEDC)

2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Antenna with permanent attenuator (Bilog)	Schaffner	CBL6143	287	24	15-May-2020
10dB/1W SMA Attenuator dc - 18GHz	Sealectro	60-674-1010-89	395	-	O/P Mon
Pre-Amplifier	Phase One	PS04-0086	1533	12	08-Feb-2020
1GHz to 8GHz Low Noise Amplifier	Wright Technologies	APS04-0085	4365	12	14-Nov-2020
High Pass Filter (4GHz)	K&L Microwave	11SH10-4000/X18000-0/0	4599	12	05-Sep-2020
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	11-Mar-2020
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5066	12	01-Oct-2020
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5067	12	01-Oct-2020
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5068	12	01-Oct-2020
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5069	12	01-Oct-2020
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	28-Nov-2020
Cable (18 GHz)	Rosenberger	LU7-071-1000	5104	12	09-Dec-2020
EmX Emissions Software	TUV SUD	EmX	5125	-	Software
Screened Room (11)	Rainford	Rainford	5136	36	01-Nov-2021
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
8 Meter Cable	Teledyne	PR90-088-8MTR	5212	12	30-Aug-2020
Horn Antenna (1-10GHz)	Schwarzbeck	BBHA 9120 B	5215	12	11-Mar-2020
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5216	12	11-Mar-2020
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	5217	12	09-Apr-2020
Preamplifier (30dB 18-40GHz)	Schwarzbeck	BBV 9721	5218	12	09-Apr-2020

Table 228

TU - Traceability Unscheduled
O/P Mon - Output Monitored using calibrated equipment

2.7 Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

2.7.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (h)(2)(iii)(iv)
ISEDC RSS-247, Clause 6.3.2(c)(d)(e)

2.7.2 Equipment Under Test and Modification State

A2289, S/N: C02ZG009P0CR - Modification State 0

2.7.3 Date of Test

06-January-2020 to 07-January-2020

2.7.4 Test Method

This test was performed in accordance with FCC KDB 905462 D02, clause 7.8.3.

Neptune CFG pvt_300L was connected to the router via an Ethernet cable and HDMI cable was connected between Test Monitor and Neptune CFG pvt_300L. A computer was connected via an Ethernet cable to the Master device and Video file was played and mirrored to the Test Monitor. Iperf command was used to load the channels under test. Radar Pulse Type 0 was then transmitted, and the Spectrum monitored. The transmissions from the UUT were observed for a period of 12 seconds after the final injected Radar Pulse. It was checked that all transmissions stopped within the 10 second period defined from the point of the end of the final Radar pulse + 10 seconds. In addition, the aggregate on time during the first 200ms and the following 9.8 seconds of the Channel Move Time was computed by the Aeroflex DFS Software. The markers on the trace data correspond to the following time periods:

Red - End Of Radar Burst, (T0)

Purple - End Of 200ms Period, (T0 + 200 ms)

Orange - End Of Channel Move Time, (T0 + 10 seconds) To verify the non-occupancy period, the PXI digitiser was replaced with a Spectrum Analyser. The external trigger from the Aeroflex DFS test system was used to trigger a 30-minute sweep from the moment the radar burst sequence was injected. It was verified that no transmissions occurred on the test channel during this time period.

2.7.5 Environmental Conditions

Ambient Temperature	25.3 - 29.4 °C
Relative Humidity	36.4 - 39.3 %

2.7.6 Test Results

5 GHz WLAN - Master To Client - 802.11ac VHT80

The equipment was configured to stream from the master to the connected EUT, as shown in the diagram below. The channel loading was set to >17% by adjusting the bandwidth specified in the iPerf UDP transfer.

To calibrate the level of the radar at the input to the companion device, the companion device was replaced by the spectrum analyser and the output of the PXI RF generator adjusted to give -62 dBm.

Radar Type	Pulse Width (µs)	PRI (µs)	Number of Pulses
0	1	1428	18

Table 229 - Radar Pulse Type 0 Characteristics

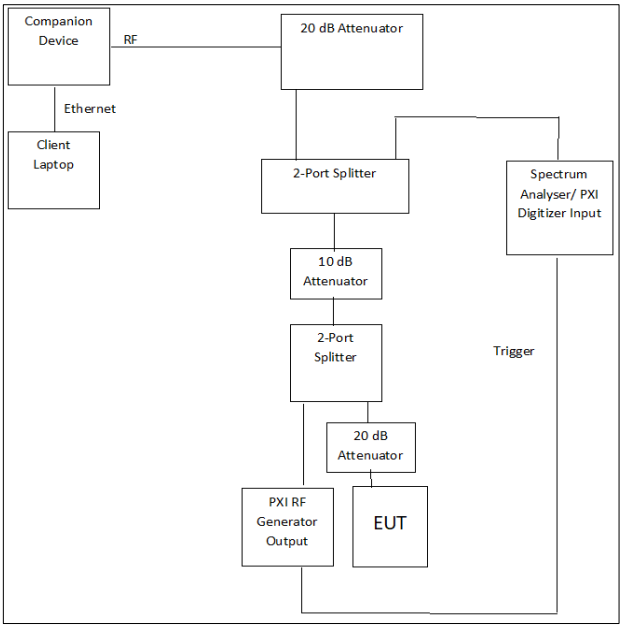


Figure 478 - Test Equipment Setup Diagram for Client without Radar Detection with Injection at the Master

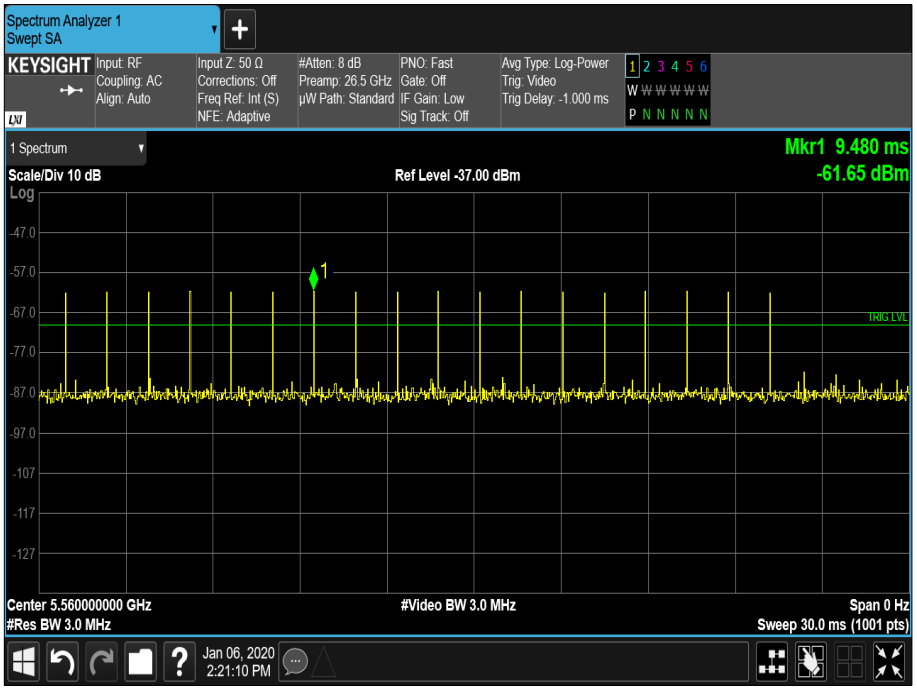


Figure 479 - Verification of Radar Type 0

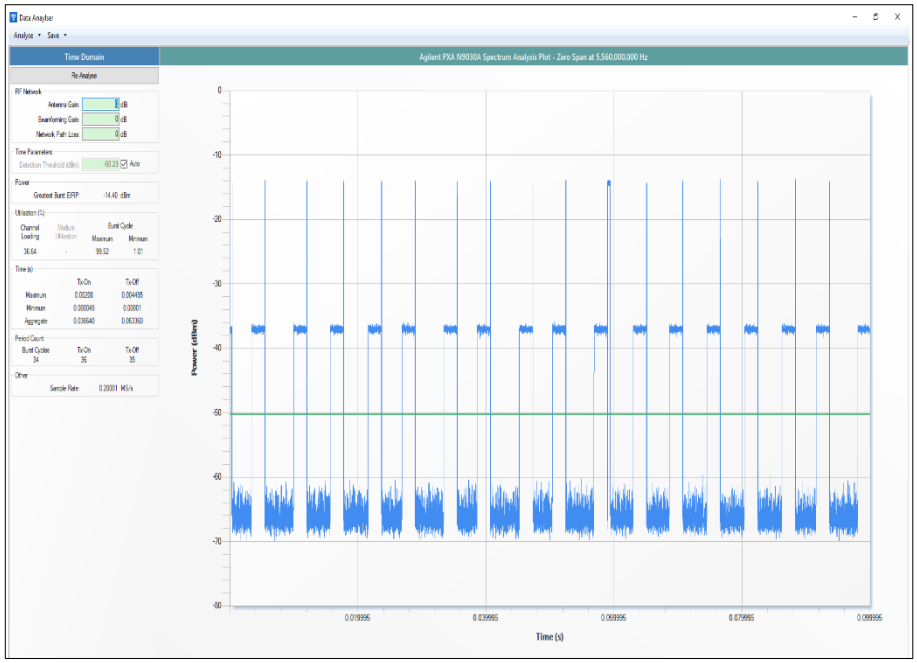


Figure 480 - Channel Loading

The channel loading was 36.4%

Maximum Transmit Power	Value (Notes 1 and 2)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.	

Table 230 - DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Test Parameter	Result
Channel Move Time	4.167 s
Channel Closing Time (Aggregate Time During 200 ms)	9.1ms
Channel Closing Time (Aggregate Time During 200 ms to 10 s)	16.54 ms
Channel Closing Time (Aggregate Time During 10 s)	25.65 ms
Transmission Observed During Non-Occupancy Period	None

Table 231 - In-Service Monitoring Test Results

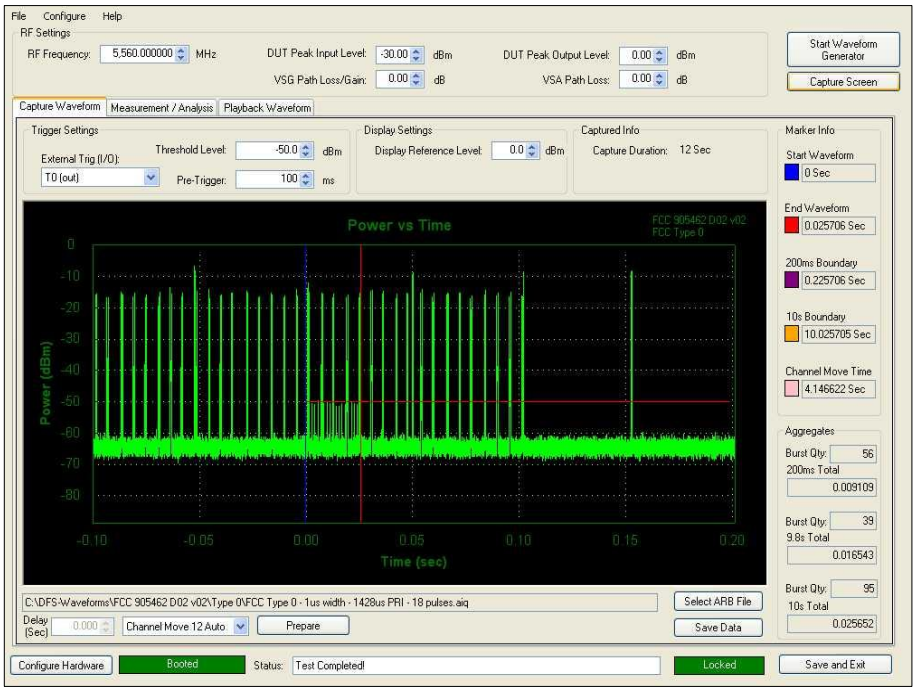


Figure 481 - First 200 ms of Channel Shutdown Period

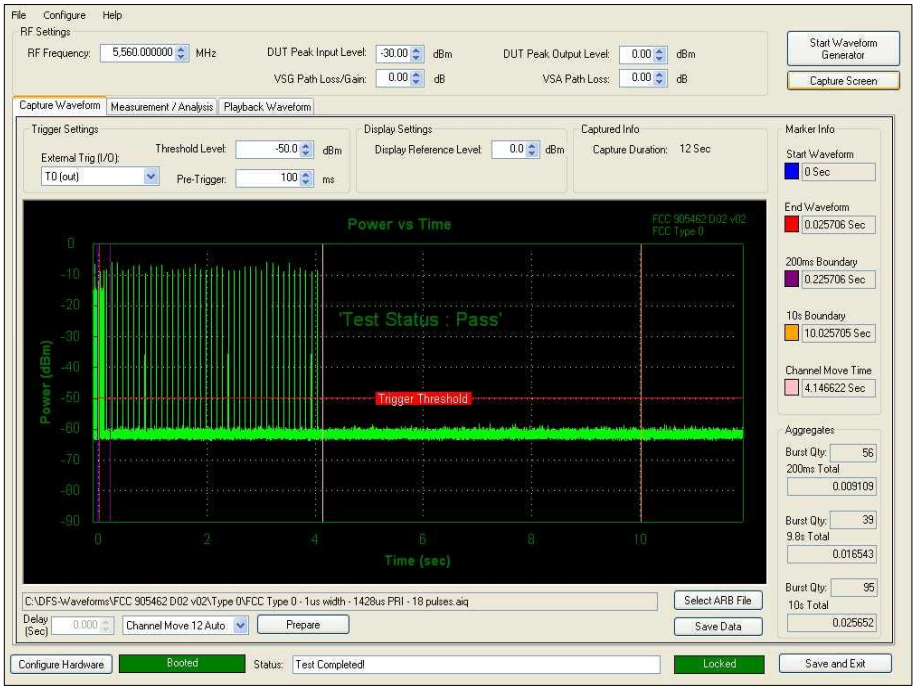


Figure 482 - First 12 s of Channel Shutdown Period

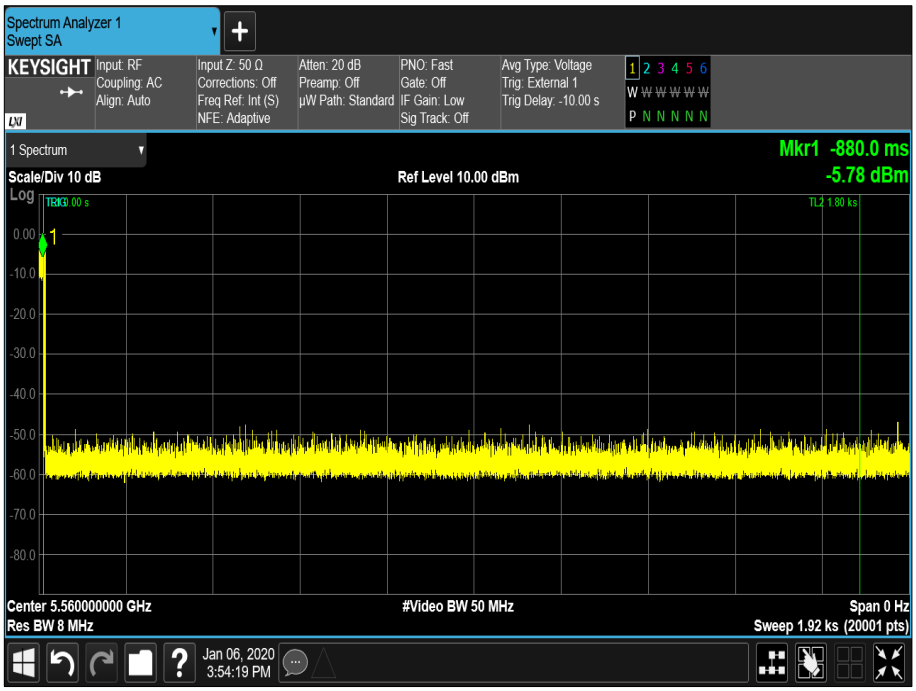


Figure 483 - 30 minute Non-Occupancy Period

5 GHz WLAN - Client to Client - 802.11ac VHT80

The equipment was set up as shown in the diagram below. The EUT was playing a high resolution video file which was screen mirroring to a video streaming device via Wi-Fi Direct.

To calibrate the level of the radar at the input to the companion device, the companion device was replaced by the spectrum analyser and the output of the PXI RF generator adjusted to give -62 dBm.

Radar Type	Pulse Width (µs)	PRI (µs)	Number of Pulses
0	1	1428	18

Table 232 - Radar Pulse Type 0 Characteristics

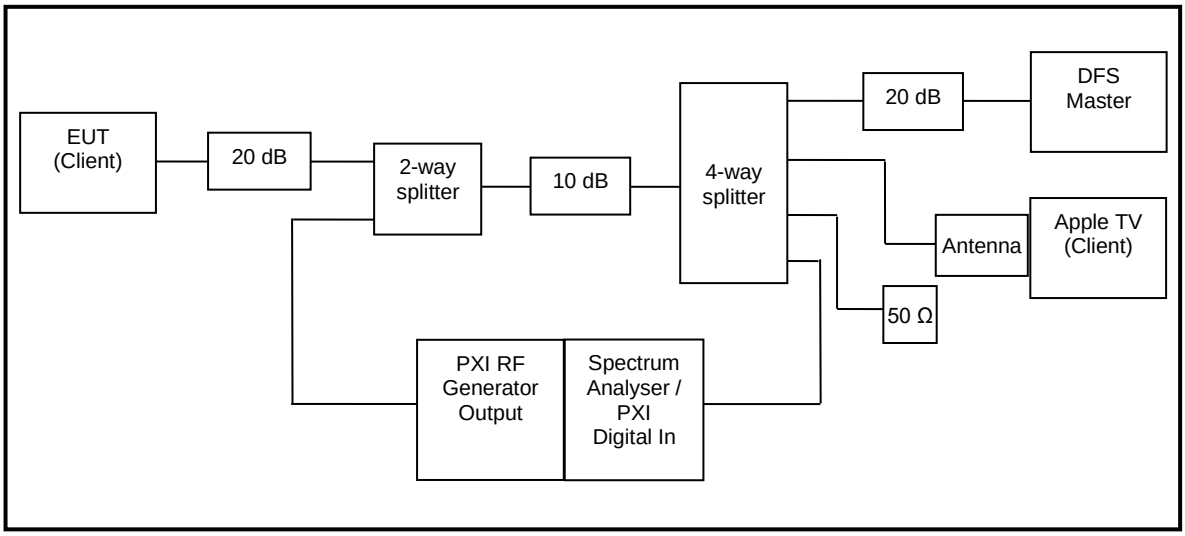


Figure 484 - Test Equipment Setup Diagram for Client to Client testing with Injection at the Master

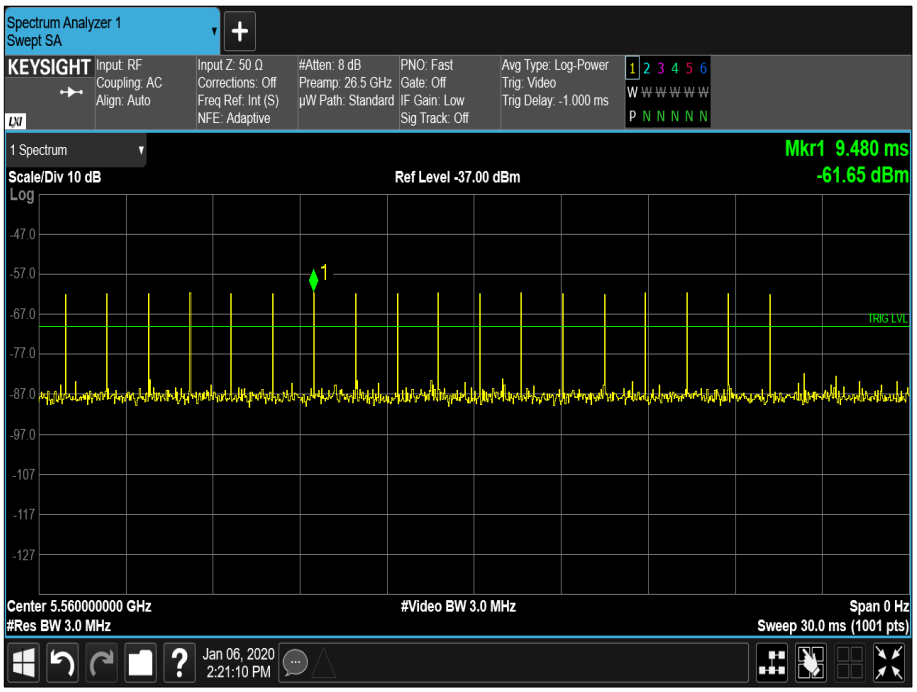


Figure 485 - Verification of Radar Type 0

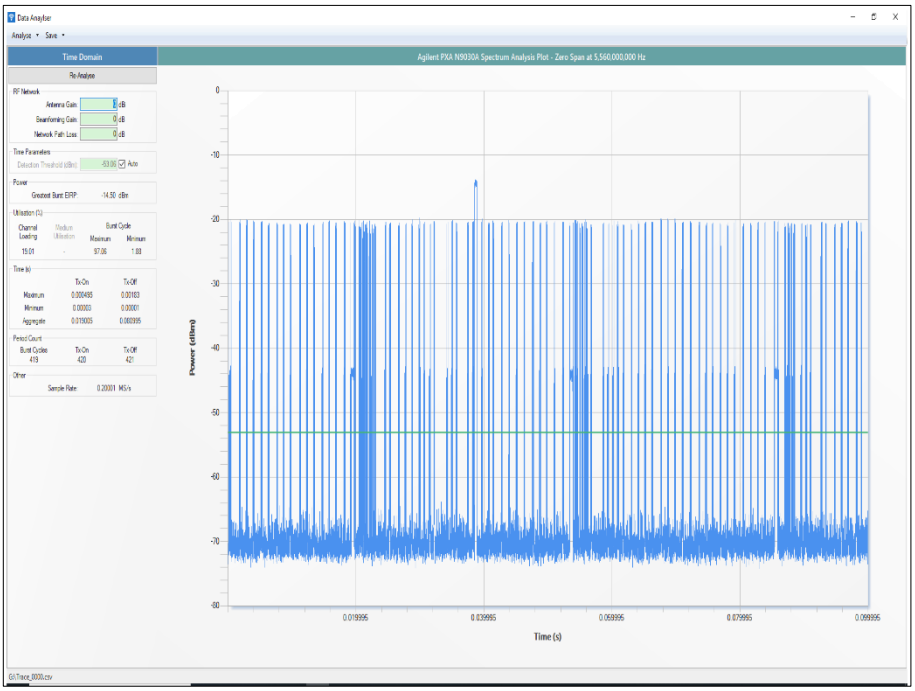


Figure 486 - Channel Loading

The channel loading was 19.01%

Maximum Transmit Power	Value (Notes 1 and 2)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.	

Table 233 - DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Test Parameter	Result
Channel Move Time	4.08 s
Channel Closing Time (Aggregate Time During 200 ms)	4.210 ms
Channel Closing Time (Aggregate Time During 200 ms to 10 s)	16.12 ms
Channel Closing Time (Aggregate Time During 10 s)	20.33 ms
Transmission Observed During Non-Occupancy Period	None

Table 234 - In-Service Monitoring Test Results

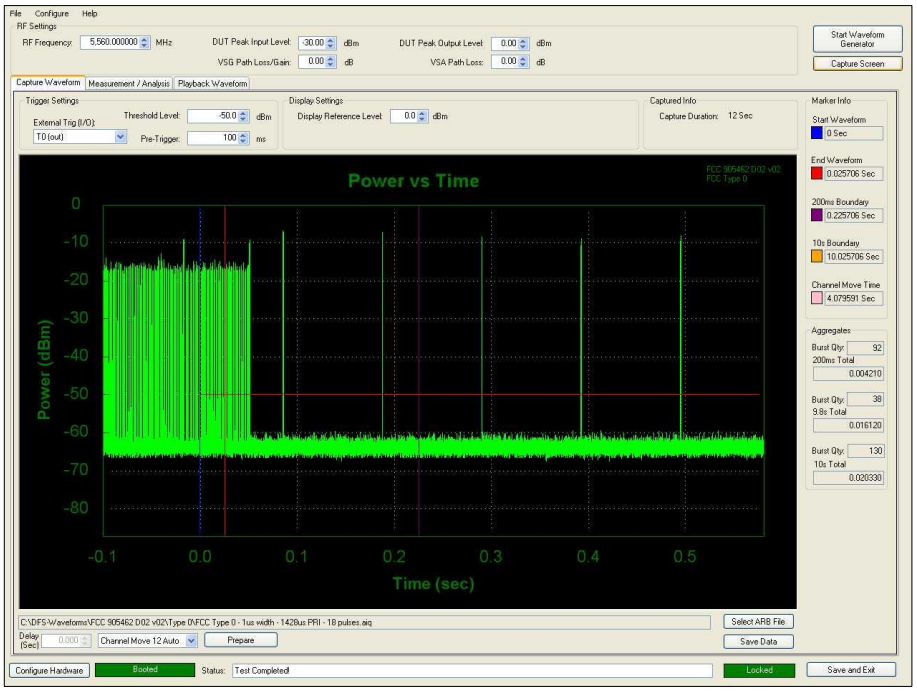


Figure 487 - First 200 ms of Channel Shutdown Period

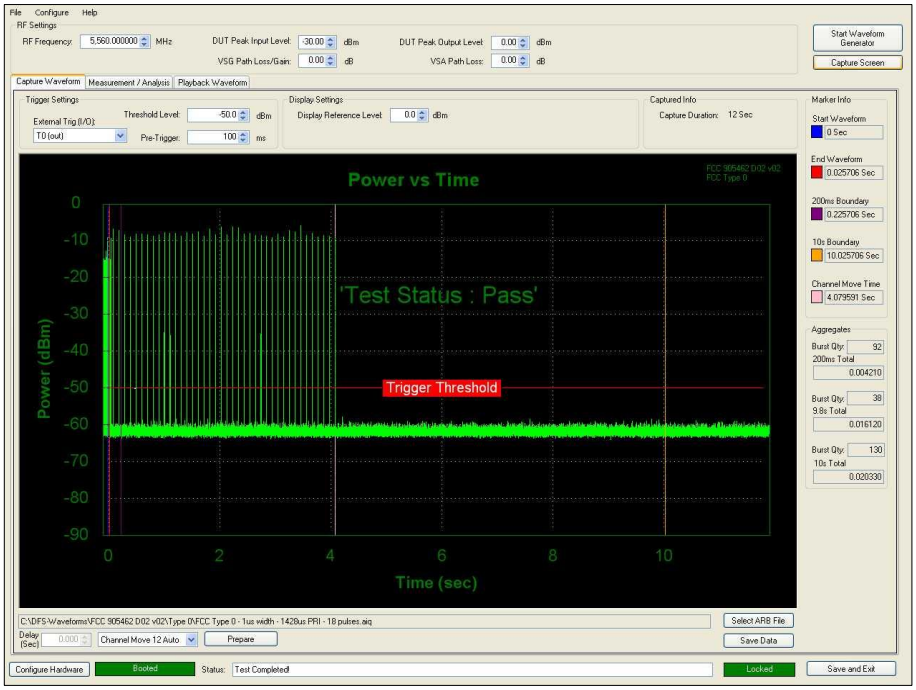


Figure 488 - First 12 s of Channel Shutdown Period

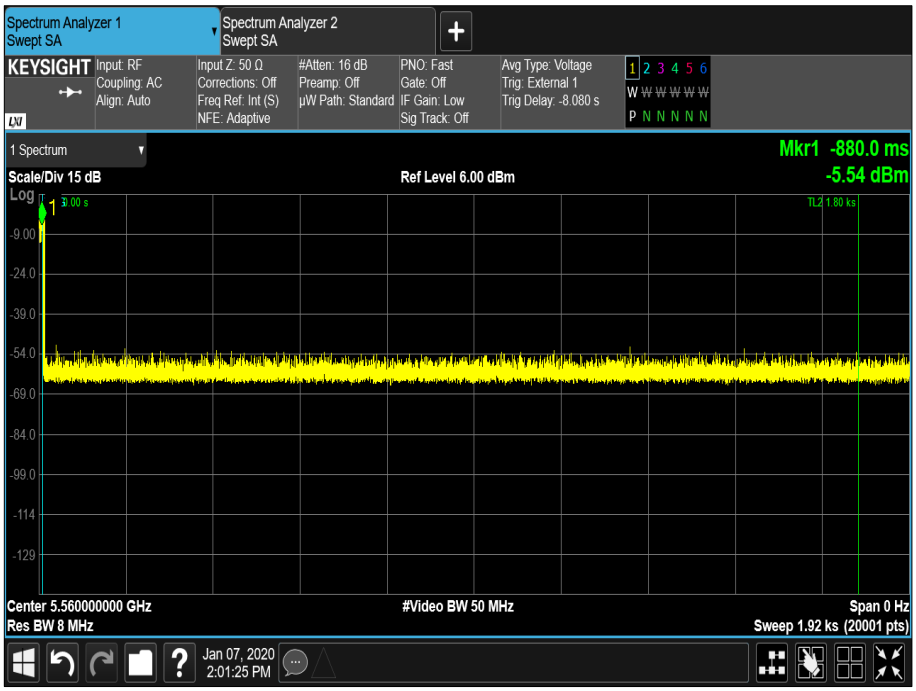


Figure 489 - 30 minute Non-Occupancy Period

FCC 47 CFR Part 15, Limit Clause 15.407 (h)(2)(iii) and ISEDC RSS-247, Limit Clause 6.3

Channel Move Time	<10 seconds
Channel Closing Time (Aggregate Time During 200ms)	<200 ms
Channel Closing Time (Aggregate Time During +200ms to 10s)	<60 ms

Table 235 - Channel Move Time and Channel Closing Transmission Time Limit

FCC 47 CFR Part 15, Limit Clause 15.407 (h)(2)(iv) and ISEDC RSS-247, Limit Clause 6.3

Non-occupancy Period	> 30 minutes

Table 236 - Non-Occupancy Limit

2.7.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
10dB/1W SMA Attenuator	Sealectro	60-674-1010-89	375	-	O/P Mon
Hygrometer	Rotronic	I-1000	3220	12	25-Sep-2020
PXI RF Digitizer	Aeroflex	3035	4012	24	15-Mar-2020
PXI RF Synthesizer	Aeroflex	3010	4013	24	15-Mar-2020
PXI RF Synthesizer	Aeroflex	3011	4014	24	15-Mar-2020
PXI Digital RF Signal Generator	Aeroflex	3025	4015	24	15-Mar-2020
Wireless Cable & Fibre Router - AC 1900, Dual-band	Asus	RT-AC68U	4881	-	TU
Cable (18 GHz)	Rosenberger	LU7-071-1000	5098	12	06-Oct-2020
Cable (18 GHz)	Rosenberger	LU7-071-1000	5100	12	13-Dec-2020
Power Splitter, 2 way	Mini-Circuits	ZN2PD2-63-S+	5237	-	O/P Mon
Power Splitter, 2 way	Mini-Circuits	ZN2PD2-63-S+	5239	-	O/P Mon
Power Splitter, 4 way	Mini-Circuits	ZN4PD1-63-S+	4744	12	23-Sep-2020
Signal Analyzer	Keysight Technologies	PXA N9030B	5432	12	05-Dec-2020

Table 237

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period	Time: ± 0.47 % Power: ± 1.29 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Restricted Band Edges	± 6.3 dB
Authorised Band Edges	± 6.3 dB
Emission Bandwidth	20 MHz: ± 530.037 kHz to 575.440 kHz 40 MHz: ±1044.487 kHz to 1280.229 kHz 80 MHz: ± 2073.403 kHz to 2402.476 kHz
Maximum Conducted Power Spectral Density	± 3.2 dB
Maximum Conducted Output Power	± 3.2 dB

Table 238

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2007, clause 4.4.3 and 4.5.1.